Appendix 1. Combined stock area BSP model for silver hake.

```
# Implementation of the surplus production model for combined whiting
# Jon Brodziak, NEFSC Nov-7-00
# LOGNORMAL OBSERVATION ERRORS
#########################################################################

model CombinedFS6300

{
# PRIOR DISTRIBUTIONS
#####################################

# PRIOR FOR K
# Lognormal with 10%Q at 700 kt and 90%Q at 2000 kt
#############################################

K ~ dlnorm(7.07599,5.94623)

# PRIOR FOR R
# Uniform from [0.01,1.99]
#############################################

r ~ dunif(0.01,1.99)

# PRIOR FOR Q
# Inverse gamma with a=b=0.001
##############################

iqFALL ~ dgamma(0.001,0.001)I(0.01,10000);
qFALL <- 1/iqFALL;
iqSPR ~ dgamma(0.001,0.001)I(0.01,10000);
qSPR <- 1/iqSPR;

# PRIOR FOR SIGMA2 - PROCESS ERROR VARIANCE
#########################################################

isigma2 ~ dgamma(a0,b0);
sigma2 <- 1/isigma2;

# PRIOR FOR TAU2FALL/SPR - OBSERVATION ERROR VARIANCE
#########################################################

itau2FALL   ~ dgamma(c0FALL,d0FALL);
tau2FALL   <- 1/itau2FALL;
itau2SPR   ~ dgamma(c0SPR,d0SPR);
tau2SPR   <- 1/itau2SPR;

# CONDITIONAL PRIORS FOR PROPORTIONS P
# Lognormal bounded as (0.001,3)
#####################################

Pmean[1] <- 0;
P[1] ~ dlnorm(Pmean[1],isigma2) I(0.001,3)
dlow[1] <- dlowpre*L[1]
dup[1] <- duppre*L[1]
# Catch error during 1963
C[1] ~ dunif(dlow[1],dup[1])

# Catch error during 1964-1977
for (i in 2:15) {
   Pmean[i] <- log(max(P[i-1] + r*P[i-1]*(1-P[i-1]) - C[i-1]/K,0.001))
   P[i]  ~ dlnorm(Pmean[i],isigma2)I(0.001,3)
```

```
    dlow[i] <- dlowpre*L[i]
    dup[i] <- duppre*L[i]
    C[i] ~ dunif(dlow[i],dup[i])
    }
# Catch error during 1978-2000
for (i in 16:38) {
    Pmean[i] <- log(max(P[i-1] + r*P[i-1]*(1-P[i-1]) - C[i-1]/K,0.001))
    P[i]     ~ dlnorm(Pmean[i],isigma2)I(0.001,3)
    dlow[i] <- dlowcur*L[i]
    dup[i] <- dupcur*L[i]
    C[i] ~ dunif(dlow[i],dup[i])
    }


# LIKELIHOOD OF SAMPLING DISTRIBUTION
#####################################
# FALL SURVEY LIKELIHOOD & RESIDUALS
for (i in 1:N) {
     lmeanFALL[i] <- log(qFALL*K*P[i])
     IFALL[i] ~ dlnorm(lmeanFALL[i],itau2FALL)
     RESIDFALL[i] <- IFALL[i] - qFALL*K*P[i]
     }
# SPRING SURVEY LIKELIHOOD & RESIDUALS
for (i in 1:NSPR) {
     lmeanSPR[i] <- log(qSPR*K*P[i+5])
     ISPR[i] ~ dlnorm(lmeanSPR[i],itau2SPR)
     RESIDSPR[i] <- ISPR[i] - qSPR*K*P[i+5]
    }
# MANAGEMENT PARAMETERS
MSP <- r*K/4
INDEXMSPFALL <- qFALL*K/2
INDEXMSPSPR <- qSPR*K/2
HMSP <- r/2
HRATIO <- H[37]/HMSP

#  COMPUTE BIOMASS AND HARVEST RATE TRAJECTORIES
for (i in 1:N) {
     B[i] <- P[i]*K
     H[i] <- C[i]/B[i]
    }

# PROJECT YEAR 2001
P2001 <- P[N+1]+r*P[N+1]*(1-P[N+1])-C[N+1]/K
B2001 <- P2001*K
H2000 <- min(C[N+1]/(P[N+1]*K),1.0)

# END OF CODE
}
```

Data

```
# Vector L() is discard-adjusted total catch
# Vector IFALL() is autumn kg/tow index
# Vector ISPR is spring kg/tow index
# N is number of years
# Sigma is state equation error with parameters a0,b0
# TauFALL is autumn observation equation error with parameters c0FALL,d0FALL
# TauSPR is autumn observation equation error with parameters c0SPR,d0SPR
# Vector C() is discard-adjusted catch with error multiplier
# Error multiplier is bounded by [dlowpre,duppre] for 1963-1976
# and is bounded by [dlowcur,dupcur] for 1976-2000

list(
```

```
L=c(167.306,248.046,352.373,258.986,124.620,99.875,99.525,55.040,
108.291,119.620,136.676,130.543,114.127,82.375,71.765,39.741,
21.790,18.276,19.242,19.217,17.450,21.432,21.461,18.625,15.779,
15.961,17.815,19.994,16.146,15.590,17.272,16.058,14.727,16.199,
15.585,14.959,14.100,15.000),
lFALL=c(12.081,3.499,4.834,2.688,2.175,2.439,1.797,2.000,2.310,3.603,2.661,
2.001,4.350,6.211,4.058,4.556,3.669,3.903,2.301,3.143,5.558,2.369,
5.743,6.415,4.848,3.590,6.214,6.994,5.219,6.200,3.996,3.204,6.164,
3.358,2.725,9.000,5.097),
lSPR=c(2.296,1.413,6.297,1.491,1.518,4.245,3.163,7.768,5.963,4.217,
3.542,2.058,3.318,3.174,1.754,1.428,1.770,2.643,2.898,3.690,1.531,
2.806,2.985,1.428,2.549,1.809,4.263,1.975,5.135,0.883,2.164,2.740,4.564),
N=37,
NSPR=33,
a0=4.0,b0=0.01,
c0FALL=2.0,d0FALL=0.01,
c0SPR=2.0,d0SPR=0.01,
dlowpre=0.90,duppre=1.10,
dlowcur=1.00,dupcur=1.10)
```

Inits

```
# Initial Condition 1
list(
P=c(0.9,0.3,0.4,0.2,0.2,0.2,0.1,0.2,0.2,0.3,0.2,0.2,0.4,
0.5,0.3,0.4,0.3,0.3,0.2,0.3,0.5,0.2,0.5,0.5,0.4,0.3,0.5,
0.6,0.4,0.5,0.3,0.3,0.5,0.3,0.2,0.7,0.4,0.5),
C=c(167.306,248.046,352.373,258.986,124.620,99.875,99.525,55.040,
108.291,119.620,136.676,130.543,114.127,82.375,71.765,39.741,
21.790,18.276,19.242,19.217,17.450,21.432,21.461,18.625,15.779,
15.961,17.815,19.994,16.146,15.590,17.272,16.058,14.727,16.199,
15.585,14.959,14.100,15.000),
r=0.4,
K=1500,
iqFALL=100,iqSPR=100,
isigma2=1000,
itau2FALL=100,itau2SPR=100)

# Initial Condition 2
list(
P=c(0.9,0.3,0.4,0.2,0.2,0.2,0.1,0.2,0.2,0.3,0.2,0.2,0.4,
0.5,0.3,0.4,0.3,0.3,0.2,0.3,0.5,0.2,0.5,0.5,0.4,0.3,0.5,
0.6,0.4,0.5,0.3,0.3,0.5,0.3,0.2,0.7,0.4,0.5),
C=c(167.306,248.046,352.373,258.986,124.620,99.875,99.525,55.040,
108.291,119.620,136.676,130.543,114.127,82.375,71.765,39.741,
21.790,18.276,19.242,19.217,17.450,21.432,21.461,18.625,15.779,
15.961,17.815,19.994,16.146,15.590,17.272,16.058,14.727,16.199,
15.585,14.959,14.100,15.000),
r=0.3,
K=1800,
iqFALL=100,iqSPR=100,
isigma2=1000,
itau2FALL=100,itau2SPR=100)
```

Results

Summary of Posterior Distribution

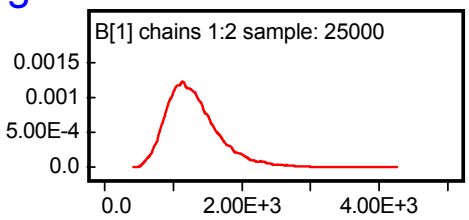
node	mean	sd	MC error	10.0%	25.0%	median	75.0%	90.0%	start	sample
B[1]	1308.0	397.1	13.18	874.8	1032.0	1247.0	1508.0	1819.0	5000	25000
B[2]	1111.0	388.4	13.03	688.2	842.7	1049.0	1306.0	1609.0	5000	25000
B[3]	978.9	363.5	12.34	598.1	726.5	908.7	1151.0	1443.0	5000	25000
B[4]	781.2	344.3	11.88	431.0	542.9	707.0	936.6	1222.0	5000	25000
B[5]	726.2	349.6	12.43	376.6	484.5	648.6	878.9	1177.0	5000	25000
B[6]	800.0	360.8	13.15	437.8	548.5	720.1	956.8	1265.0	5000	25000
B[7]	860.2	348.3	12.55	509.4	621.2	783.3	1012.0	1304.0	5000	25000
B[8]	927.2	349.7	12.47	576.9	687.4	851.2	1079.0	1368.0	5000	25000
B[9]	1002.0	338.8	11.81	663.8	770.8	927.8	1148.0	1428.0	5000	25000
B[10]	1014.0	338.3	11.57	674.8	783.1	941.4	1165.0	1440.0	5000	25000
B[11]	1030.0	341.7	11.61	686.7	797.1	956.4	1183.0	1464.0	5000	25000
B[12]	1024.0	345.7	11.65	675.6	787.9	950.3	1180.0	1457.0	5000	25000
B[13]	1061.0	355.7	11.91	700.2	815.8	986.0	1222.0	1507.0	5000	25000
B[14]	1089.0	360.3	12.0	722.5	840.3	1013.0	1251.0	1545.0	5000	25000
B[15]	1112.0	357.7	11.88	750.5	869.0	1039.0	1273.0	1566.0	5000	25000
B[16]	1128.0	355.2	11.76	765.7	886.2	1057.0	1290.0	1580.0	5000	25000
B[17]	1149.0	350.5	11.61	788.9	912.0	1080.0	1308.0	1593.0	5000	25000
B[18]	1179.0	353.2	11.74	814.6	941.7	1112.0	1339.0	1622.0	5000	25000
B[19]	1180.0	351.8	11.67	812.8	941.2	1116.0	1344.0	1625.0	5000	25000
B[20]	1185.0	356.7	11.85	808.6	942.6	1120.0	1353.0	1636.0	5000	25000
B[21]	1203.0	358.8	11.92	826.1	957.0	1141.0	1373.0	1656.0	5000	25000
B[22]	1196.0	363.4	12.02	810.6	946.8	1134.0	1372.0	1657.0	5000	25000
B[23]	1231.0	373.3	12.35	833.6	973.8	1168.0	1413.0	1706.0	5000	25000
B[24]	1241.0	379.3	12.57	833.4	980.3	1177.0	1427.0	1724.0	5000	25000
B[25]	1245.0	380.7	12.59	838.8	982.1	1179.0	1433.0	1725.0	5000	25000
B[26]	1229.0	379.1	12.56	820.3	966.8	1166.0	1417.0	1714.0	5000	25000
B[27]	1254.0	386.2	12.78	839.5	986.1	1188.0	1443.0	1746.0	5000	25000
B[28]	1259.0	387.5	12.85	841.3	991.5	1192.0	1456.0	1749.0	5000	25000
B[29]	1237.0	384.0	12.65	824.0	974.0	1173.0	1428.0	1724.0	5000	25000
B[30]	1250.0	381.7	12.59	843.3	983.8	1184.0	1437.0	1740.0	5000	25000
B[31]	1229.0	378.8	12.53	820.9	966.3	1165.0	1416.0	1705.0	5000	25000
B[32]	1235.0	376.3	12.52	833.2	973.9	1170.0	1418.0	1713.0	5000	25000
B[33]	1236.0	380.0	12.55	829.2	975.9	1173.0	1421.0	1719.0	5000	25000
B[34]	1239.0	376.5	12.49	838.3	979.6	1172.0	1418.0	1718.0	5000	25000
B[35]	1206.0	377.0	12.45	805.1	947.1	1144.0	1392.0	1678.0	5000	25000
B[36]	1256.0	381.9	12.63	848.1	991.3	1190.0	1442.0	1741.0	5000	25000
B[37]	1249.0	387.4	12.77	833.4	983.0	1183.0	1439.0	1735.0	5000	25000
C[1]	167.4	9.634	0.06066	154.0	159.1	167.2	175.7	180.7	5000	25000
C[2]	247.7	14.29	0.0926	228.1	235.3	247.6	259.9	267.7	5000	25000
C[3]	352.8	20.38	0.1349	324.5	335.2	352.9	370.6	380.9	5000	25000
C[4]	259.6	14.99	0.09832	238.5	246.6	260.0	272.6	280.1	5000	25000
C[5]	124.8	7.171	0.04626	114.7	118.6	124.8	131.0	134.6	5000	25000
C[6]	100.1	5.752	0.03622	92.08	95.2	100.3	105.1	108.0	5000	25000
C[7]	99.55	5.767	0.03682	91.58	94.57	99.54	104.6	107.5	5000	25000
C[8]	55.08	3.196	0.02048	50.62	52.3	55.13	57.88	59.44	5000	25000
C[9]	108.3	6.238	0.04093	99.61	102.8	108.2	113.7	116.9	5000	25000
C[10]	119.5	6.902	0.04778	110.0	113.5	119.5	125.5	129.1	5000	25000
C[11]	136.5	7.877	0.04712	125.6	129.7	136.4	143.3	147.5	5000	25000
C[12]	129.9	7.531	0.04683	119.8	123.4	129.6	136.4	140.7	5000	25000
C[13]	113.8	6.569	0.04465	104.8	108.1	113.7	119.5	123.0	5000	25000
C[14]	82.32	4.731	0.02803	75.78	78.24	82.29	86.41	88.95	5000	25000
C[15]	71.77	4.145	0.02643	66.0	68.19	71.76	75.35	77.52	5000	25000
C[16]	41.72	1.152	0.007406	40.13	40.72	41.72	42.73	43.32	5000	25000
C[17]	22.88	0.6256	0.004216	22.01	22.34	22.88	23.42	23.75	5000	25000
C[18]	19.19	0.5255	0.003199	18.46	18.74	19.2	19.65	19.92	5000	25000
C[19]	20.2	0.5559	0.003493	19.43	19.71	20.2	20.68	20.97	5000	25000
C[20]	20.18	0.5547	0.003396	19.4	19.7	20.18	20.66	20.94	5000	25000
C[21]	18.32	0.5044	0.003276	17.62	17.89	18.33	18.76	19.02	5000	25000
C[22]	22.5	0.618	0.003979	21.65	21.96	22.5	23.04	23.36	5000	25000
C[23]	22.53	0.6166	0.003904	21.68	22.0	22.53	23.07	23.39	5000	25000
C[24]	19.55	0.5388	0.003301	18.81	19.08	19.54	20.02	20.31	5000	25000

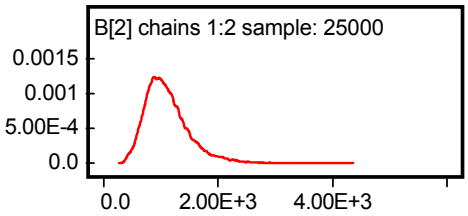
C[25]	16.56	0.4537	0.00276	15.93	16.17	16.56	16.95	17.2	5000	25000
C[26]	16.76	0.4616	0.002943	16.12	16.36	16.76	17.15	17.4	5000	25000
C[27]	18.7	0.5137	0.003108	17.99	18.26	18.71	19.14	19.42	5000	25000
C[28]	21.0	0.5774	0.00339	20.2	20.5	21.0	21.49	21.8	5000	25000
C[29]	16.95	0.4666	0.003191	16.31	16.55	16.95	17.36	17.6	5000	25000
C[30]	16.37	0.4506	0.002864	15.74	15.98	16.37	16.76	16.99	5000	25000
C[31]	18.13	0.4999	0.003073	17.44	17.7	18.13	18.56	18.83	5000	25000
C[32]	16.86	0.4638	0.003017	16.22	16.46	16.85	17.26	17.51	5000	25000
C[33]	15.46	0.424	0.0027	14.88	15.1	15.46	15.83	16.05	5000	25000
C[34]	17.01	0.4653	0.00296	16.37	16.61	17.01	17.41	17.65	5000	25000
C[35]	16.36	0.452	0.002825	15.74	15.97	16.36	16.75	16.99	5000	25000
C[36]	15.71	0.4336	0.00284	15.11	15.33	15.71	16.08	16.31	5000	25000
C[37]	14.81	0.4084	0.002749	14.24	14.45	14.8	15.16	15.37	5000	25000
C[38]	15.75	0.4349	0.002651	15.15	15.37	15.75	16.12	16.35	5000	25000
H[1]	0.1391	0.04102	0.001415	0.09153	0.1102	0.1342	0.1625	0.1926	5000	25000
H[2]	0.2495	0.08707	0.003059	0.1533	0.1889	0.2357	0.2943	0.3607	5000	25000
H[3]	0.4059	0.1402	0.00499	0.2442	0.3056	0.388	0.4849	0.5896	5000	25000
H[4]	0.3917	0.1603	0.005785	0.2118	0.2766	0.3664	0.4788	0.6023	5000	25000
H[5]	0.209	0.09411	0.00343	0.1054	0.1416	0.1923	0.258	0.3316	5000	25000
H[6]	0.1485	0.06183	0.002256	0.07864	0.1043	0.1388	0.1825	0.2304	5000	25000
H[7]	0.1326	0.04849	0.001737	0.07598	0.0979	0.1267	0.1606	0.1964	5000	25000
H[8]	0.06671	0.02225	7.851E-4	0.03982	0.0508	0.06465	0.08032	0.09607	5000	25000
H[9]	0.1185	0.03492	0.001196	0.07515	0.09378	0.1163	0.1406	0.1644	5000	25000
H[10]	0.1292	0.03811	0.001288	0.0822	0.1023	0.1267	0.153	0.1792	5000	25000
H[11]	0.1449	0.04233	0.001438	0.09238	0.1148	0.1421	0.1717	0.2	5000	25000
H[12]	0.1393	0.04163	0.001413	0.08859	0.1096	0.1361	0.1648	0.1932	5000	25000
H[13]	0.1177	0.03493	0.001191	0.07509	0.09273	0.1151	0.1394	0.1633	5000	25000
H[14]	0.08281	0.02442	8.242E-4	0.05291	0.06525	0.08098	0.09809	0.1148	5000	25000
H[15]	0.07032	0.02026	6.833E-4	0.0454	0.05603	0.0689	0.0828	0.09662	5000	25000
H[16]	0.04019	0.01125	3.839E-4	0.02641	0.03229	0.03952	0.04702	0.05452	5000	25000
H[17]	0.02154	0.005852	1.997E-4	0.01434	0.01746	0.02119	0.02511	0.02908	5000	25000
H[18]	0.01758	0.004767	1.627E-4	0.0118	0.01429	0.01725	0.02038	0.0236	5000	25000
H[19]	0.01848	0.005032	1.718E-4	0.01241	0.01502	0.01807	0.02149	0.02487	5000	25000
H[20]	0.01843	0.005145	1.759E-4	0.01233	0.01488	0.018	0.02139	0.02498	5000	25000
H[21]	0.01645	0.004503	1.544E-4	0.01102	0.01333	0.01606	0.01913	0.02223	5000	25000
H[22]	0.02042	0.005847	2.008E-4	0.01355	0.01638	0.01983	0.02378	0.02779	5000	25000
H[23]	0.01984	0.005593	1.929E-4	0.01321	0.01594	0.0193	0.02314	0.0271	5000	25000
H[24]	0.01713	0.004975	1.725E-4	0.01132	0.01368	0.01659	0.01995	0.02352	5000	25000
H[25]	0.01445	0.004121	1.424E-4	0.009577	0.01156	0.01403	0.01688	0.01975	5000	25000
H[26]	0.01485	0.004336	1.497E-4	0.00978	0.01181	0.01438	0.01735	0.02044	5000	25000
H[27]	0.01623	0.004685	1.625E-4	0.01072	0.01295	0.01574	0.01898	0.02228	5000	25000
H[28]	0.01815	0.005286	1.835E-4	0.01198	0.01442	0.01758	0.0212	0.02497	5000	25000
H[29]	0.01494	0.004398	1.515E-4	0.009806	0.01188	0.01445	0.01743	0.02058	5000	25000
H[30]	0.01422	0.004038	1.396E-4	0.009405	0.01137	0.01382	0.01662	0.01944	5000	25000
H[31]	0.01607	0.004707	1.624E-4	0.01059	0.0128	0.01555	0.01876	0.02207	5000	25000
H[32]	0.01481	0.004196	1.455E-4	0.009813	0.01187	0.01439	0.01731	0.02028	5000	25000
H[33]	0.01361	0.003969	1.366E-4	0.00899	0.01085	0.01317	0.01587	0.01864	5000	25000
H[34]	0.01488	0.00417	1.434E-4	0.009882	0.01198	0.0145	0.01737	0.02028	5000	25000
H[35]	0.01482	0.004509	1.533E-4	0.009717	0.01173	0.01429	0.01727	0.02036	5000	25000
H[36]	0.01357	0.00383	1.326E-4	0.009003	0.01087	0.01318	0.01584	0.01856	5000	25000
H[37]	0.01293	0.003814	1.316E-4	0.008481	0.01027	0.01252	0.01508	0.0178	5000	25000
HMSP	0.4034	0.196	0.007461	0.2088	0.265	0.3477	0.488	0.7106	5000	25000
HRATIO	0.03638	0.01274	4.448E-4	0.02024	0.02867	0.0367	0.04364	0.05055	5000	25000
INDEXMSPFALL	2.273	0.1936	0.005373	2.03	2.142	2.268	2.398	2.52	5000	25000
INDEXMSPSPR	1.502	0.1633	0.003561	1.305	1.388	1.49	1.601	1.715	5000	25000
K	1274.0	380.5	12.88	862.1	1009.0	1211.0	1463.0	1758.0	5000	25000
MSP	239.5	112.9	4.095	153.0	173.8	204.6	260.0	373.8	5000	25000
RESIDFALL[1]	7.41	0.4991	0.0119	6.778	7.111	7.44	7.752	8.015	5000	25000
RESIDFALL[2]	-0.4176	0.4627	0.01194	-1.005	-0.7113	-0.4071	-0.1085	0.1591	5000	25000
RESIDFALL[3]	1.403	0.3739	0.00738	0.9167	1.174	1.426	1.662	1.858	5000	25000
RESIDFALL[4]	-0.001479	0.4045	0.01173	-0.5329	-0.2604	0.0273	0.2863	0.4952	5000	25000
RESIDFALL[5]	-0.3101	0.515	0.01805	-1.021	-0.6104	-0.2464	0.05686	0.2927	5000	25000
RESIDFALL[6]	-0.3377	0.6034	0.02233	-1.228	-0.6674	-0.2272	0.0927	0.3389	5000	25000
RESIDFALL[7]	-1.223	0.5521	0.01972	-2.004	-1.595	-1.156	-0.8118	-0.5561	5000	25000

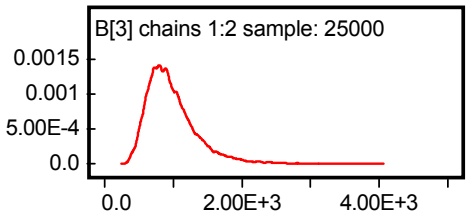
RESIDFALL[8]	-1.278	0.5416	0.01847	-2.015	-1.652	-1.23	-0.871	-0.6133	5000	25000
RESIDFALL[9]	-1.258	0.478	0.01411	-1.886	-1.586	-1.236	-0.9155	-0.6531	5000	25000
RESIDFALL[10]	-3.182E-4	0.3965	0.008779	-0.5115	-0.2631	0.005313	0.2719	0.5067	5000	25000
RESIDFALL[11]	-1.001	0.3763	0.007359	-1.483	-1.243	-0.9924	-0.7444	-0.5263	5000	25000
RESIDFALL[12]	-1.631	0.3539	0.005124	-2.083	-1.854	-1.62	-1.392	-1.189	5000	25000
RESIDFALL[13]	0.5872	0.3783	0.004855	0.1045	0.3568	0.6103	0.8427	1.043	5000	25000
RESIDFALL[14]	2.345	0.3927	0.004594	1.844	2.11	2.369	2.611	2.812	5000	25000
RESIDFALL[15]	0.09854	0.3853	0.004198	-0.3967	-0.1391	0.1213	0.3604	0.5647	5000	25000
RESIDFALL[16]	0.5344	0.3878	0.004381	0.03384	0.2936	0.553	0.7976	1.009	5000	25000
RESIDFALL[17]	-0.4364	0.3929	0.005166	-0.9407	-0.6884	-0.424	-0.1683	0.05158	5000	25000
RESIDFALL[18]	-0.3159	0.4093	0.005825	-0.8364	-0.5771	-0.3045	-0.03935	0.1993	5000	25000
RESIDFALL[19]	-1.922	0.4116	0.005936	-2.448	-2.19	-1.912	-1.646	-1.412	5000	25000
RESIDFALL[20]	-1.092	0.4126	0.006306	-1.616	-1.358	-1.082	-0.8155	-0.582	5000	25000
RESIDFALL[21]	1.253	0.4179	0.006392	0.7187	0.9848	1.267	1.533	1.769	5000	25000
RESIDFALL[22]	-1.901	0.4211	0.007491	-2.435	-2.176	-1.897	-1.624	-1.372	5000	25000
RESIDFALL[23]	1.346	0.4231	0.007297	0.8025	1.081	1.361	1.637	1.869	5000	25000
RESIDFALL[24]	1.986	0.4472	0.009121	1.415	1.703	2.003	2.289	2.534	5000	25000
RESIDFALL[25]	0.4043	0.4389	0.00814	-0.1603	0.1289	0.417	0.7079	0.9511	5000	25000
RESIDFALL[26]	-0.791	0.4405	0.009039	-1.349	-1.076	-0.7807	-0.4937	-0.2419	5000	25000
RESIDFALL[27]	1.743	0.4461	0.008926	1.167	1.461	1.761	2.047	2.293	5000	25000
RESIDFALL[28]	2.502	0.4565	0.009411	1.919	2.223	2.522	2.81	3.065	5000	25000
RESIDFALL[29]	0.809	0.4524	0.009774	0.2318	0.5257	0.8244	1.112	1.368	5000	25000
RESIDFALL[30]	1.739	0.4389	0.008248	1.174	1.465	1.761	2.037	2.275	5000	25000
RESIDFALL[31]	-0.3852	0.439	0.008732	-0.9539	-0.6649	-0.376	-0.0889	0.1618	5000	25000
RESIDFALL[32]	-1.205	0.4245	0.007445	-1.755	-1.474	-1.19	-0.9178	-0.6718	5000	25000
RESIDFALL[33]	1.754	0.443	0.009067	1.187	1.469	1.769	2.047	2.306	5000	25000
RESIDFALL[34]	-1.066	0.4326	0.00692	-1.612	-1.336	-1.049	-0.7746	-0.5343	5000	25000
RESIDFALL[35]	-1.573	0.4547	0.009785	-2.143	-1.864	-1.572	-1.286	-1.015	5000	25000
RESIDFALL[36]	4.515	0.4434	0.008314	3.942	4.245	4.538	4.818	5.059	5000	25000
RESIDFALL[37]	0.6448	0.4672	0.01026	0.05262	0.3482	0.6593	0.9573	1.221	5000	25000
RESIDSPR[1]	0.4601	0.4242	0.01514	-0.145	0.2176	0.5282	0.7679	0.9416	5000	25000
RESIDSPR[2]	-0.5825	0.3905	0.01325	-1.12	-0.8459	-0.5417	-0.2899	-0.1076	5000	25000
RESIDSPR[3]	4.132	0.3831	0.01228	3.619	3.873	4.158	4.416	4.608	5000	25000
RESIDSPR[4]	-0.8646	0.3459	0.009172	-1.315	-1.097	-0.852	-0.6191	-0.4273	5000	25000
RESIDSPR[5]	-0.8614	0.3008	0.005738	-1.248	-1.061	-0.8537	-0.6533	-0.4842	5000	25000
RESIDSPR[6]	1.827	0.2919	0.004827	1.451	1.641	1.838	2.026	2.19	5000	25000
RESIDSPR[7]	0.7645	0.2806	0.003527	0.3993	0.5871	0.7777	0.9547	1.109	5000	25000
RESIDSPR[8]	5.283	0.2985	0.003478	4.899	5.097	5.298	5.488	5.645	5000	25000
RESIDSPR[9]	3.409	0.3094	0.003209	3.013	3.225	3.43	3.621	3.779	5000	25000
RESIDSPR[10]	1.602	0.3057	0.002674	1.206	1.414	1.62	1.81	1.976	5000	25000
RESIDSPR[11]	0.8863	0.3067	0.002551	0.4899	0.6964	0.906	1.096	1.262	5000	25000
RESIDSPR[12]	-0.6529	0.3099	0.002673	-1.051	-0.8474	-0.6373	-0.4412	-0.2719	5000	25000
RESIDSPR[13]	0.5324	0.32	0.003025	0.1191	0.3305	0.5484	0.753	0.9252	5000	25000
RESIDSPR[14]	0.3853	0.3215	0.003243	-0.03009	0.1828	0.4017	0.6017	0.78	5000	25000
RESIDSPR[15]	-1.043	0.3239	0.003767	-1.462	-1.245	-1.027	-0.8217	-0.6458	5000	25000
RESIDSPR[16]	-1.415	0.3279	0.003738	-1.842	-1.615	-1.396	-1.189	-1.014	5000	25000
RESIDSPR[17]	-1.05	0.3341	0.004764	-1.48	-1.256	-1.033	-0.826	-0.6408	5000	25000
RESIDSPR[18]	-0.261	0.3376	0.004604	-0.6961	-0.4711	-0.24	-0.02736	0.1506	5000	25000
RESIDSPR[19]	-0.02667	0.3502	0.005937	-0.4838	-0.2401	-0.001852	0.2142	0.3948	5000	25000
RESIDSPR[20]	0.755	0.35	0.005353	0.299	0.5404	0.7829	0.9959	1.177	5000	25000
RESIDSPR[21]	-1.363	0.3513	0.00596	-1.819	-1.576	-1.34	-1.121	-0.9372	5000	25000
RESIDSPR[22]	-0.1472	0.355	0.005938	-0.6063	-0.36	-0.1222	0.09692	0.2812	5000	25000
RESIDSPR[23]	0.01804	0.3638	0.006224	-0.454	-0.1995	0.04536	0.2724	0.4526	5000	25000
RESIDSPR[24]	-1.485	0.3584	0.006494	-1.949	-1.706	-1.459	-1.241	-1.051	5000	25000
RESIDSPR[25]	-0.3971	0.3497	0.005308	-0.8507	-0.6111	-0.371	-0.1534	0.02863	5000	25000
RESIDSPR[26]	-1.085	0.3483	0.005735	-1.538	-1.301	-1.064	-0.8439	-0.661	5000	25000
RESIDSPR[27]	1.351	0.3386	0.00474	0.9136	1.139	1.374	1.585	1.763	5000	25000
RESIDSPR[28]	-0.9376	0.3506	0.005904	-1.391	-1.151	-0.9157	-0.6956	-0.51	5000	25000
RESIDSPR[29]	2.213	0.3439	0.004355	1.77	2.003	2.238	2.45	2.628	5000	25000
RESIDSPR[30]	-1.956	0.3553	0.006486	-2.406	-2.174	-1.937	-1.72	-1.531	5000	25000
RESIDSPR[31]	-0.7985	0.3532	0.005435	-1.254	-1.008	-0.7715	-0.5543	-0.3763	5000	25000
RESIDSPR[32]	-0.2002	0.3632	0.006786	-0.6725	-0.4229	-0.177	0.04899	0.2389	5000	25000
RESIDSPR[33]	1.596	0.3647	0.006092	1.124	1.378	1.624	1.849	2.034	5000	25000
qFALL	0.00387	0.001132	4.01E-5	0.002506	0.003072	0.003769	0.004549	0.005342	5000	25000

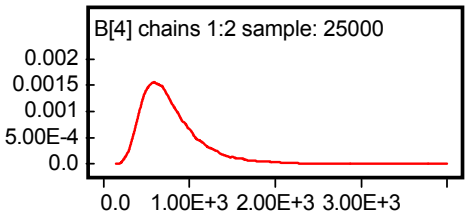
qSPR	0.002549	7.413E-4	2.515E-5	0.00166	0.002029	0.002482	0.002991	0.003513	5000	25000
r	0.8068	0.392	0.01492	0.4176	0.5299	0.6954	0.9759	1.421	5000	25000
sigma2	0.003697	0.002791	4.496E-5	0.001561	0.002068	0.002928	0.004397	0.00657	5000	25000
tau2FALL	0.1429	0.03933	8.201E-4	0.09823	0.1149	0.1373	0.1647	0.1946	5000	25000
tau2SPR	0.2723	0.07275	8.992E-4	0.1916	0.2212	0.261	0.311	0.3664	5000	25000

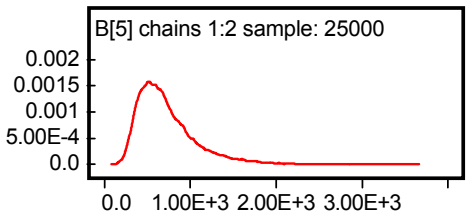
Marginal Plots

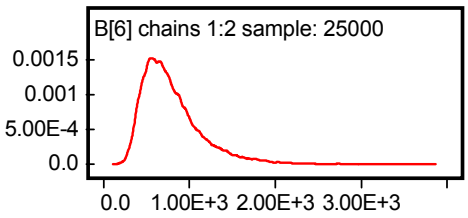


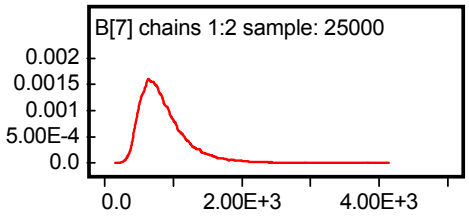


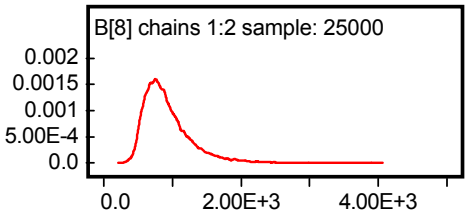


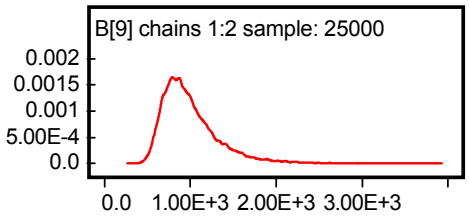


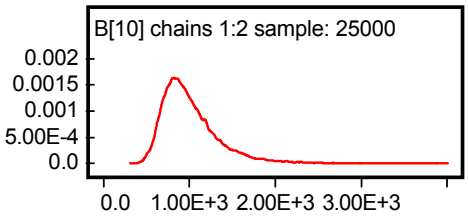


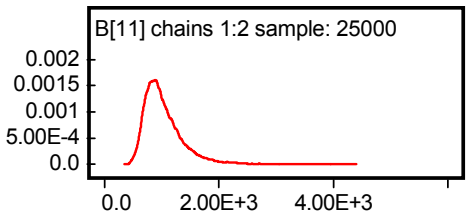








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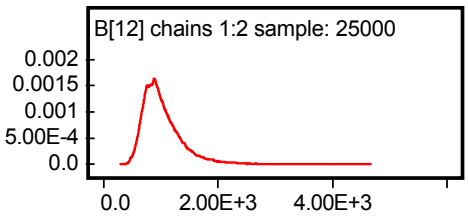
4.00E+3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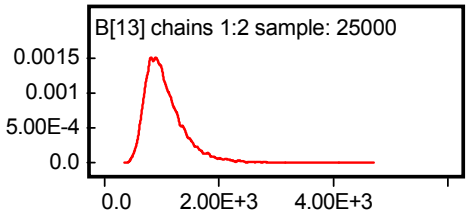
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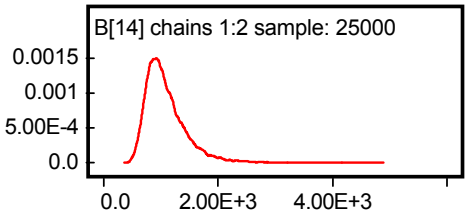
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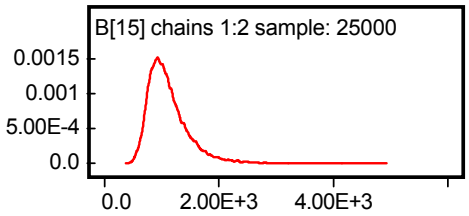
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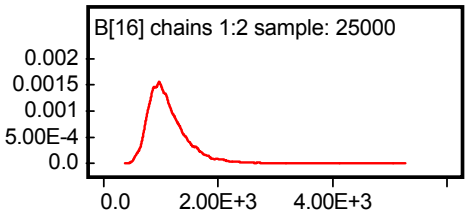
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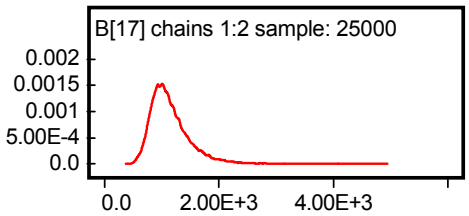
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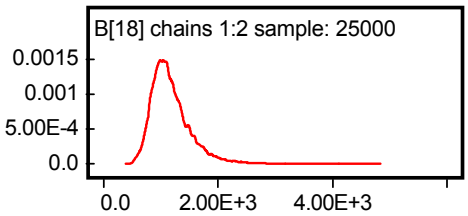
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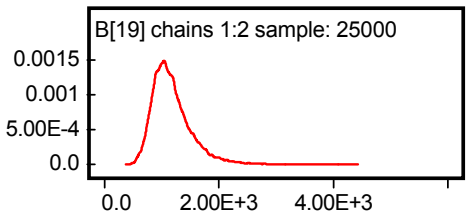
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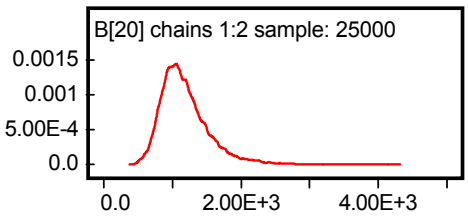
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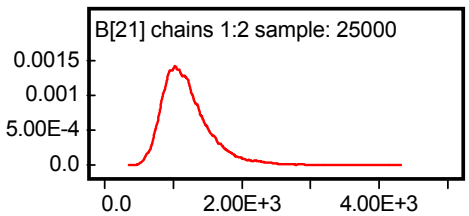
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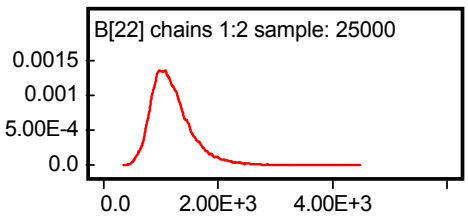
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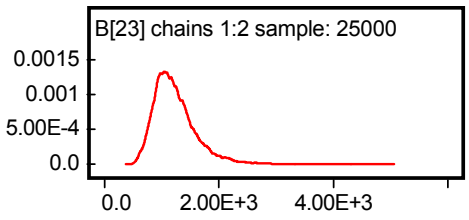
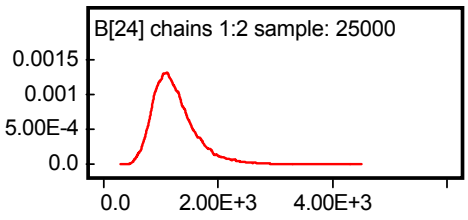
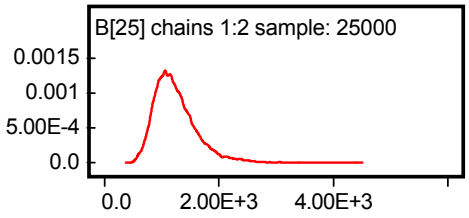
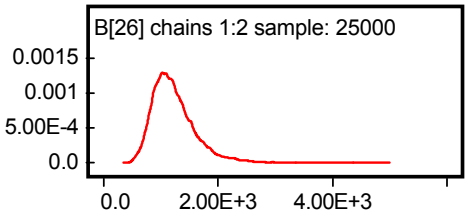
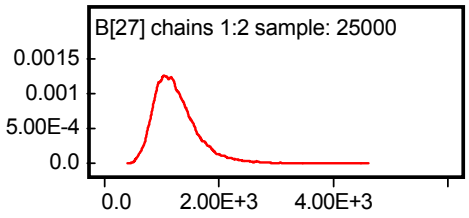
2.00E+3
4.00E+3

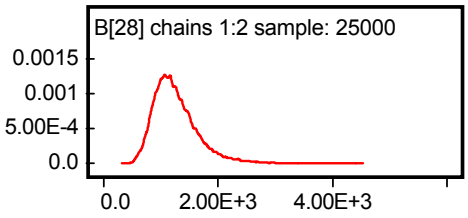

B[23] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

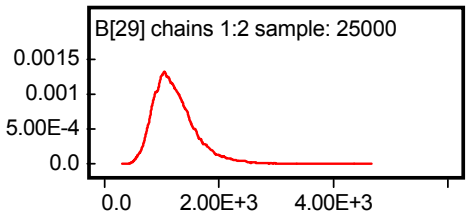

B[24] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

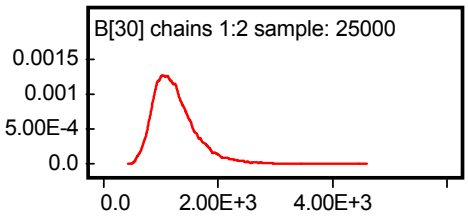

B[25] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

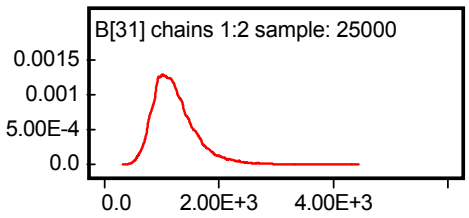

B[26] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

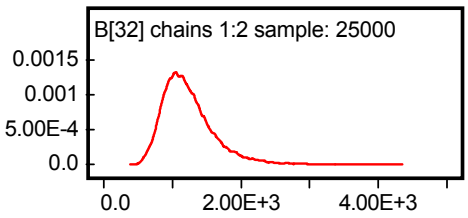

B[27] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

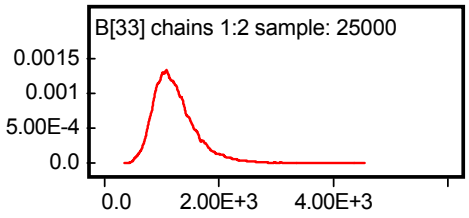

B[28] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

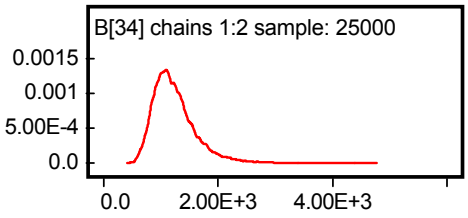

B[29] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

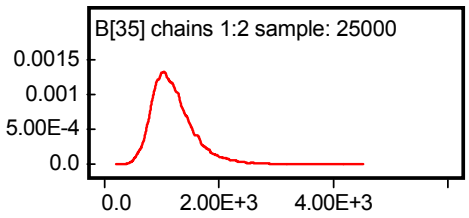

B[30] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

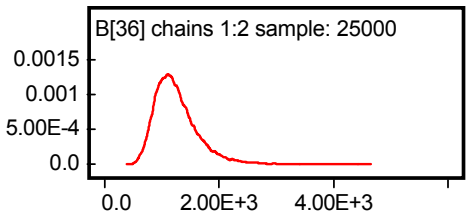

B[31] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

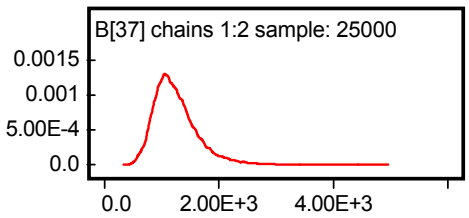

B[32] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

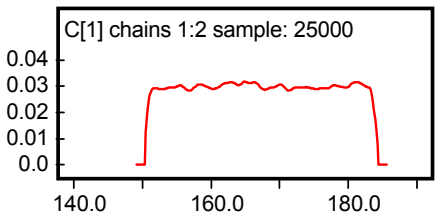

B[33] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

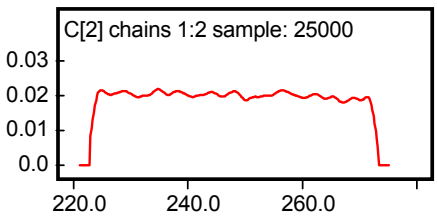

B[34] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

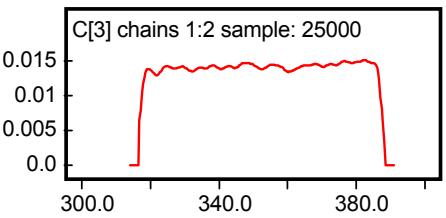

B[35] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

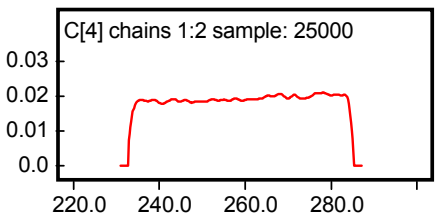

B[36] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

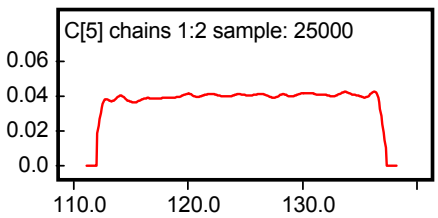

B[37] chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

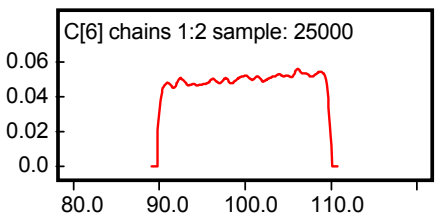

C[1] chains 1:2 sample: 25000
0.04
0.03
0.02
0.01
0.0
140.0
160.0
180.0

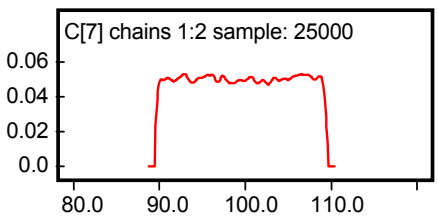

C[2] chains 1:2 sample: 25000
0.03
0.02
0.01
0.0
220.0
240.0
260.0

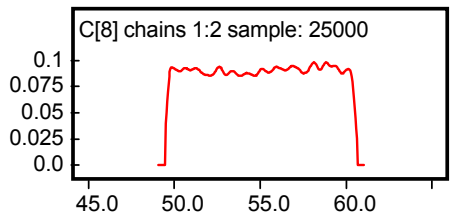

C[3] chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
300.0
340.0
380.0

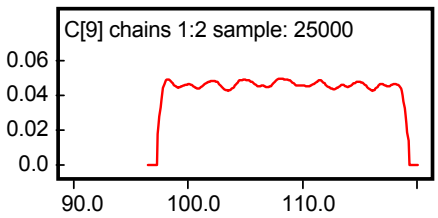

C[4] chains 1:2 sample: 25000
0.03
0.02
0.01
0.0
220.0
240.0
260.0
280.0

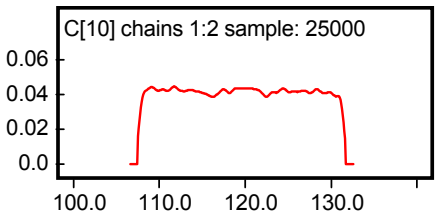

C[5] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
110.0
120.0
130.0

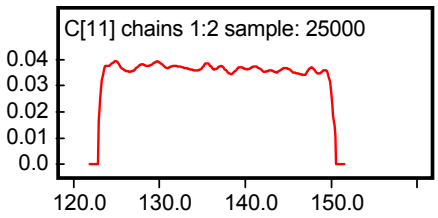

C[6] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
80.0
90.0
100.0
110.0

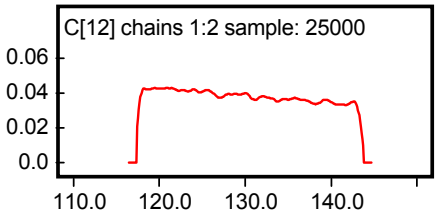

C[7] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
80.0
90.0
100.0
110.0

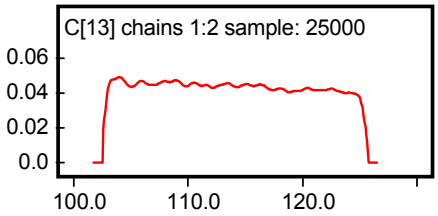

C[8] chains 1:2 sample: 25000
0.1
0.075
0.05
0.025
0.0
45.0
50.0
55.0
60.0

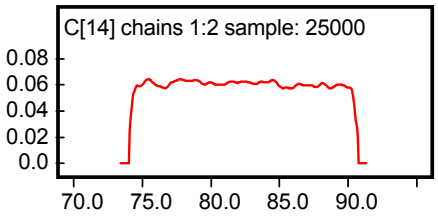

C[9] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
90.0
100.0
110.0

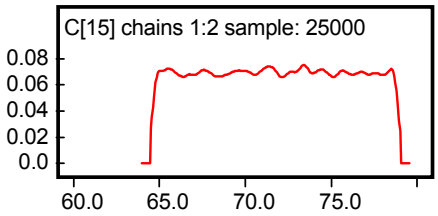

C[10] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
100.0
110.0
120.0
130.0

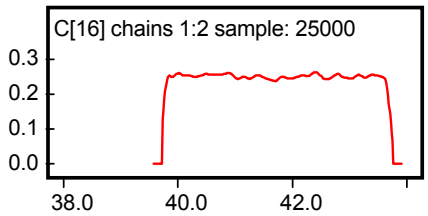

C[11] chains 1:2 sample: 25000
0.04
0.03
0.02
0.01
0.0
120.0
130.0
140.0
150.0

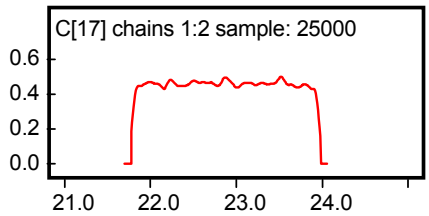

C[12] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
110.0
120.0
130.0
140.0

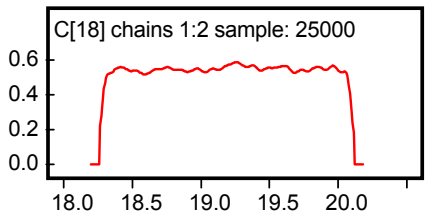

C[13] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
100.0
110.0
120.0

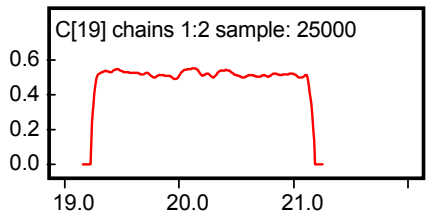

C[14] chains 1:2 sample: 25000
0.08
0.06
0.04
0.02
0.0
70.0
75.0
80.0
85.0
90.0

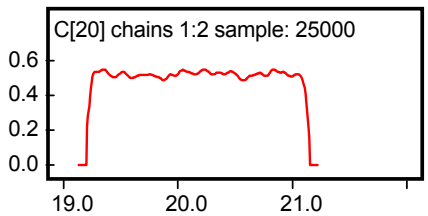

C[15] chains 1:2 sample: 25000
0.08
0.06
0.04
0.02
0.0
60.0
65.0
70.0
75.0

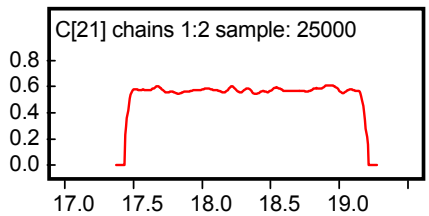

C[16] chains 1:2 sample: 25000
0.3
0.2
0.1
0.0
38.0
40.0
42.0

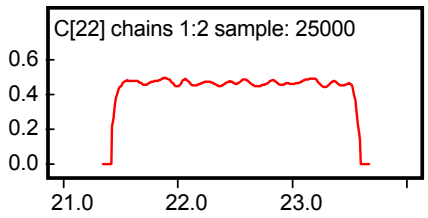

C[17] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
21.0
22.0
23.0
24.0

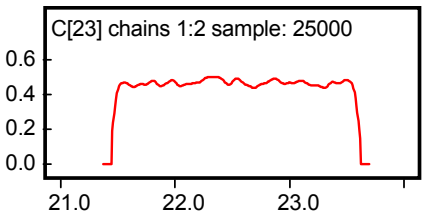

C[18] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
18.0
18.5
19.0
19.5
20.0

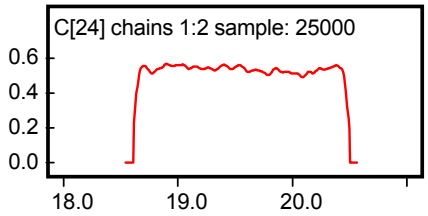

C[19] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
19.0
20.0
21.0

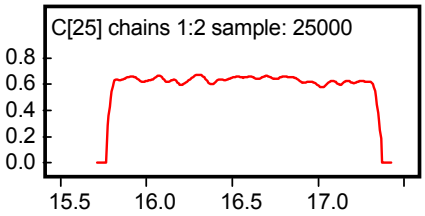

C[20] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
19.0
20.0
21.0

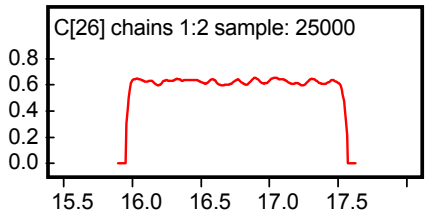

C[21] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
17.0
17.5
18.0
18.5
19.0

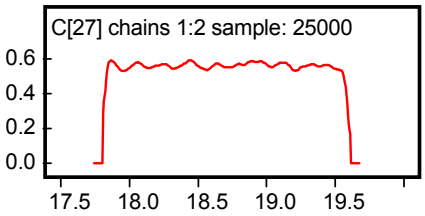

C[22] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
21.0
22.0
23.0

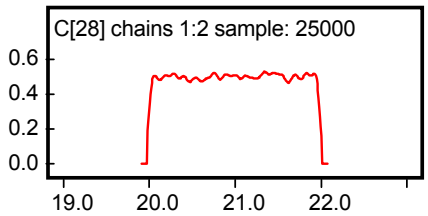

C[23] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
21.0
22.0
23.0

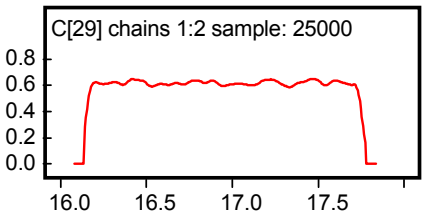

C[24] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
18.0
19.0
20.0

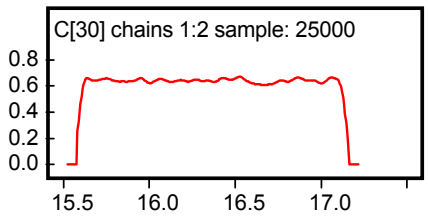

C[25] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
15.5
16.0
16.5
17.0

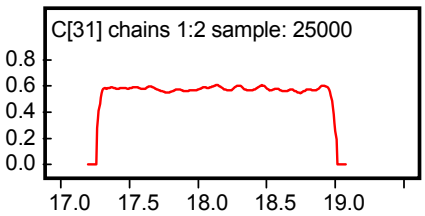

C[26] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
15.5
16.0
16.5
17.0
17.5

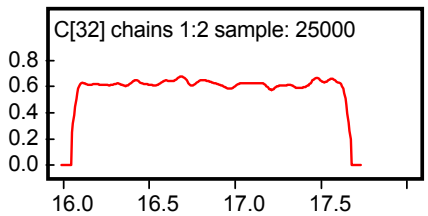

C[27] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
17.5
18.0
18.5
19.0
19.5

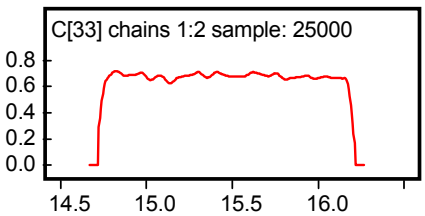

C[28] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
19.0
20.0
21.0
22.0

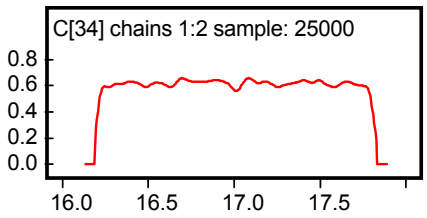

C[29] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
16.0
16.5
17.0
17.5

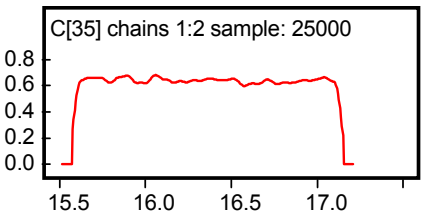

C[30] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
15.5
16.0
16.5
17.0

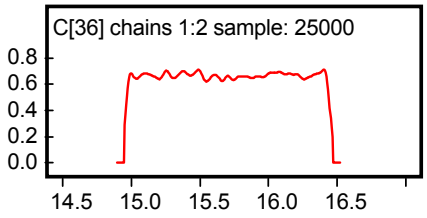

C[31] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
17.0
17.5
18.0
18.5
19.0

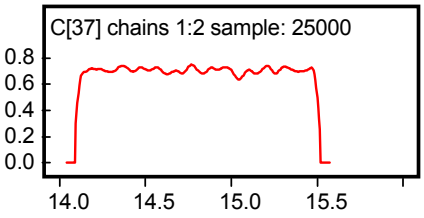

C[32] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
16.0
16.5
17.0
17.5

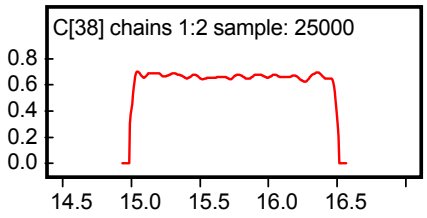

C[33] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
14.5
15.0
15.5
16.0

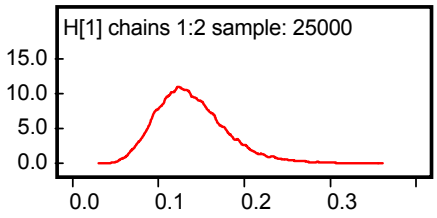

C[34] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
16.0
16.5
17.0
17.5

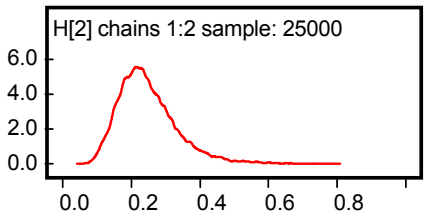

C[35] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
15.5
16.0
16.5
17.0

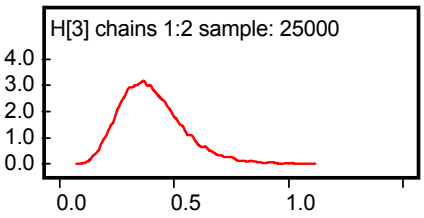

C[36] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
14.5
15.0
15.5
16.0
16.5

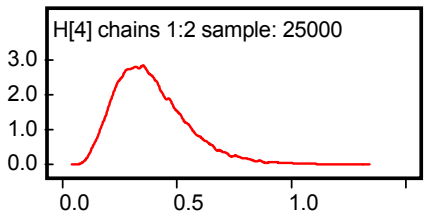

C[37] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
14.0
14.5
15.0
15.5

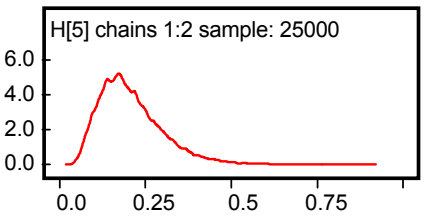

C[38] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
14.5
15.0
15.5
16.0
16.5

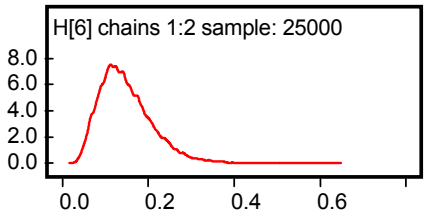

H[1] chains 1:2 sample: 25000
15.0
10.0
5.0
0.0
0.0
0.1
0.2
0.3

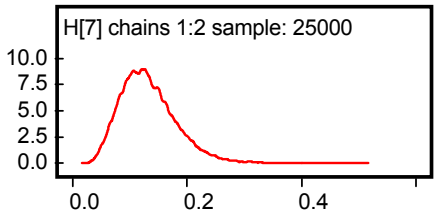

H[2] chains 1:2 sample: 25000
6.0
4.0
2.0
0.0
0.0
0.2
0.4
0.6
0.8

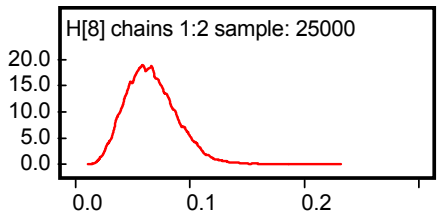

H[3] chains 1:2 sample: 25000
4.0
3.0
2.0
1.0
0.0
0.0
0.5
1.0

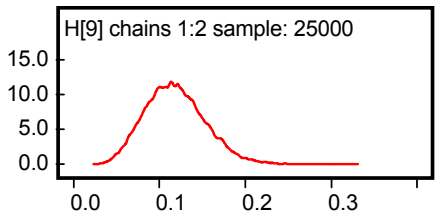

H[4] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
0.0
0.5
1.0

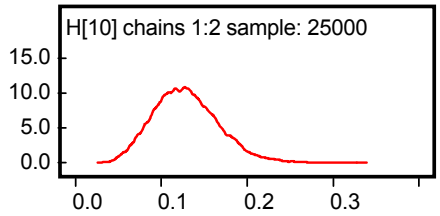

H[5] chains 1:2 sample: 25000
6.0
4.0
2.0
0.0
0.0
0.25
0.5
0.75

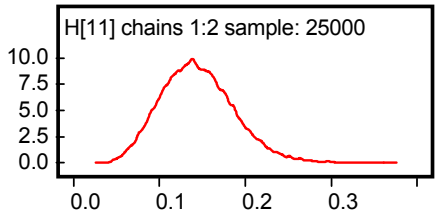

H[6] chains 1:2 sample: 25000
8.0
6.0
4.0
2.0
0.0
0.0
0.2
0.4
0.6

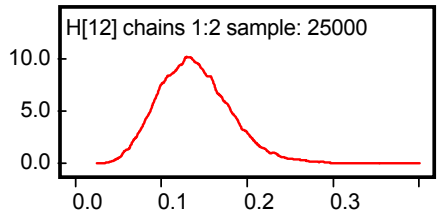

H[7] chains 1:2 sample: 25000
10.0
7.5
5.0
2.5
0.0
0.0
0.2
0.4

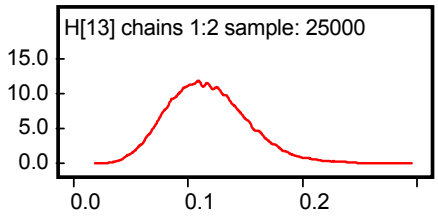

H[8] chains 1:2 sample: 25000
20.0
15.0
10.0
5.0
0.0
0.0
0.1
0.2

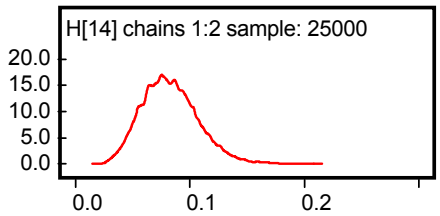

H[9] chains 1:2 sample: 25000
15.0
10.0
5.0
0.0
0.0
0.1
0.2
0.3

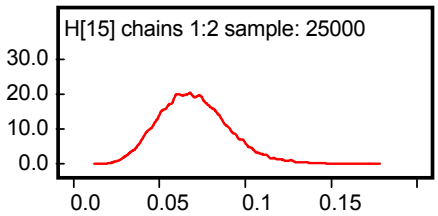

H[10] chains 1:2 sample: 25000
15.0
10.0
5.0
0.0
0.0
0.1
0.2
0.3

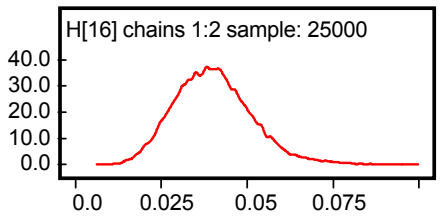

H[11] chains 1:2 sample: 25000
10.0
7.5
5.0
2.5
0.0
0.0
0.1
0.2
0.3

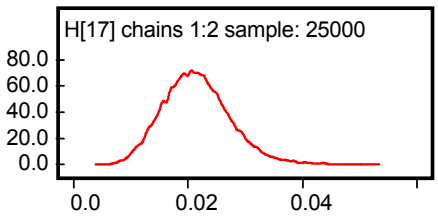

H[12] chains 1:2 sample: 25000
10.0
5.0
0.0
0.0
0.1
0.2
0.3

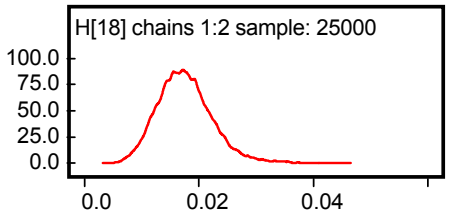

H[13] chains 1:2 sample: 25000
15.0
10.0
5.0
0.0
0.0
0.1
0.2

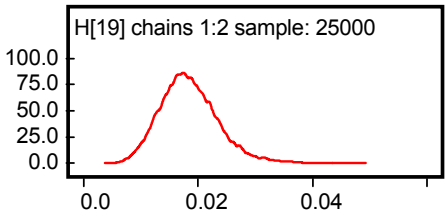

H[14] chains 1:2 sample: 25000
20.0
15.0
10.0
5.0
0.0
0.0
0.1
0.2

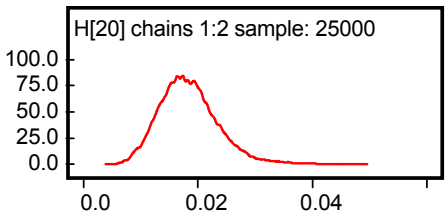

H[15] chains 1:2 sample: 25000
30.0
20.0
10.0
0.0
0.0
0.05
0.1
0.15

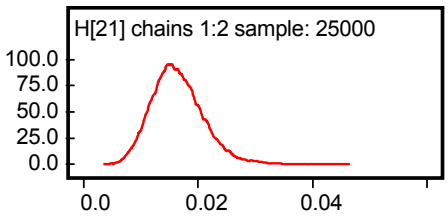

H[16] chains 1:2 sample: 25000
40.0
30.0
20.0
10.0
0.0
0.0
0.025
0.05
0.075

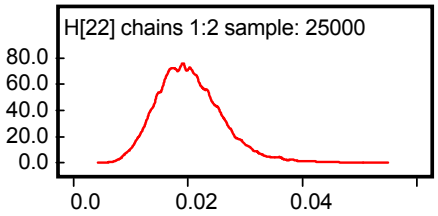

H[17] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.02
0.04

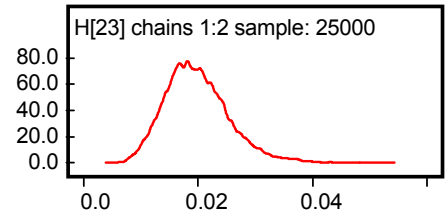

H[18] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04

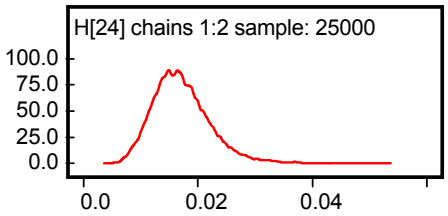

H[19] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04

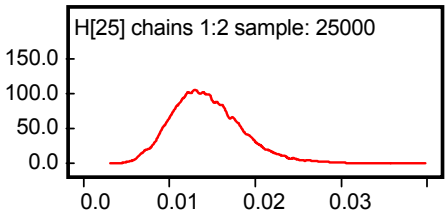

H[20] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04

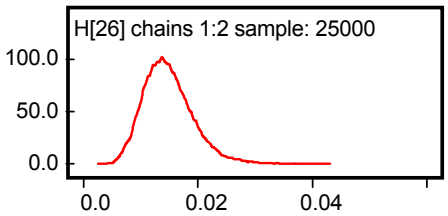

H[21] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04

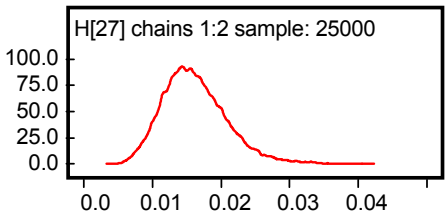

H[22] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.02
0.04

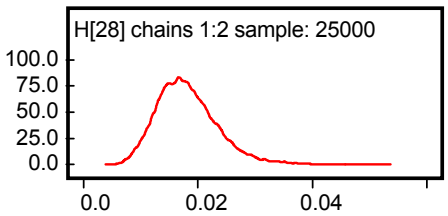

H[23] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.02
0.04

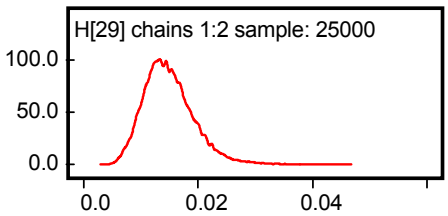

H[24] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04

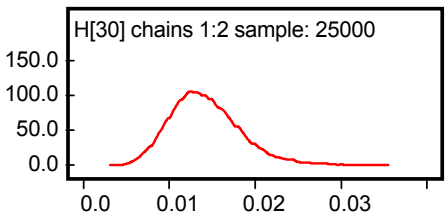

H[25] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03

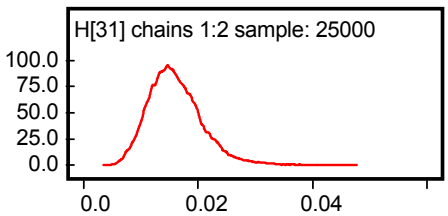

H[26] chains 1:2 sample: 25000
100.0
50.0
0.0
0.0
0.02
0.04

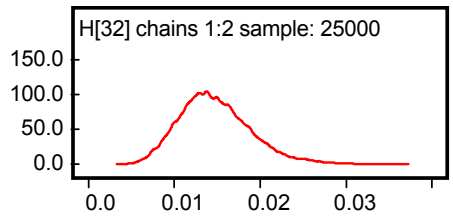

H[27] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.01
0.02
0.03
0.04

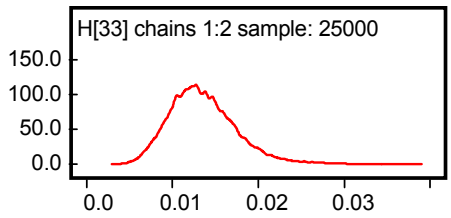

H[28] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04

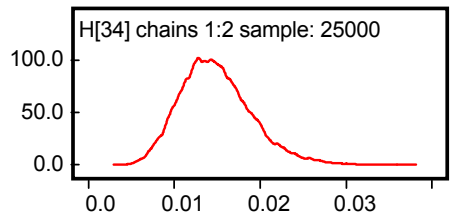

H[29] chains 1:2 sample: 25000
100.0
50.0
0.0
0.0
0.02
0.04

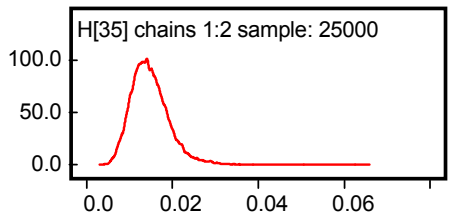

H[30] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03

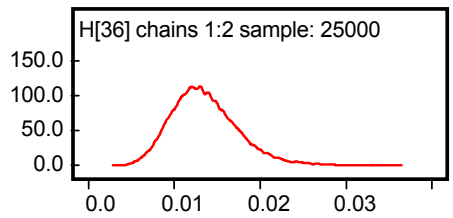

H[31] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04

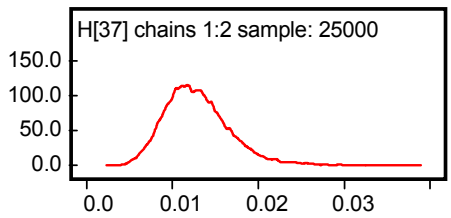

H[32] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03

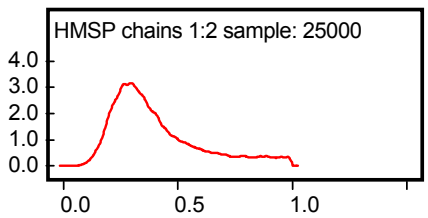

H[33] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03

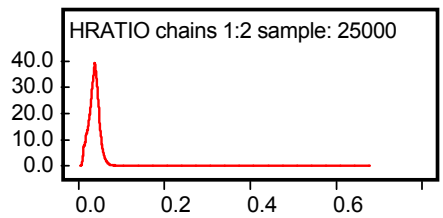

H[34] chains 1:2 sample: 25000
100.0
50.0
0.0
0.0
0.01
0.02
0.03

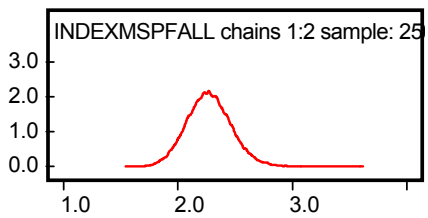

H[35] chains 1:2 sample: 25000
100.0
50.0
0.0
0.0
0.02
0.04
0.06

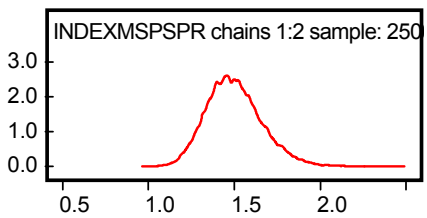

H[36] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03

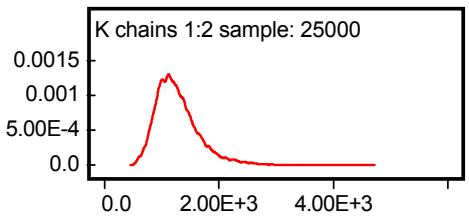

H[37] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03

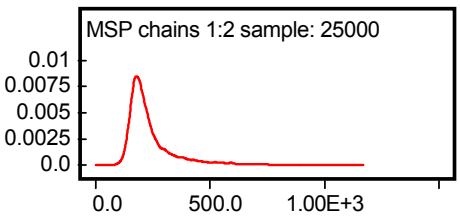

HMSP chains 1:2 sample: 25000
4.0
3.0
2.0
1.0
0.0
0.0
0.5
1.0

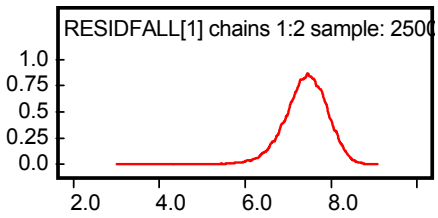

HRATIO chains 1:2 sample: 25000
40.0
30.0
20.0
10.0
0.0
0.0
0.2
0.4
0.6

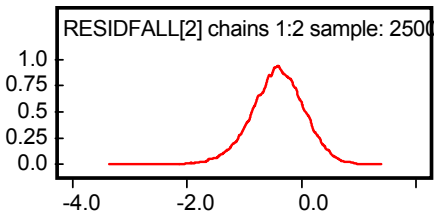

INDEXMSPFALL chains 1:2 sample: 25
3.0
2.0
1.0
0.0
1.0
2.0
3.0

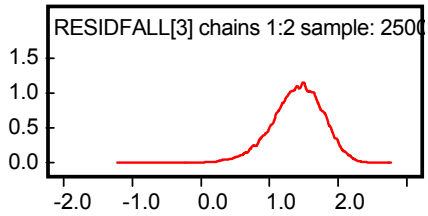

INDEXMSPSPR chains 1:2 sample: 250
3.0
2.0
1.0
0.0
0.5
1.0
1.5
2.0

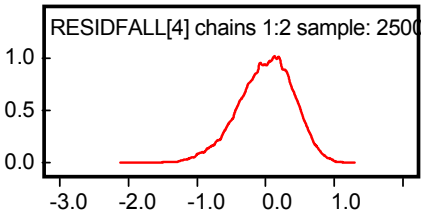

K chains 1:2 sample: 25000
0.0015
0.001
5.00E-4
0.0
0.0
2.00E+3
4.00E+3

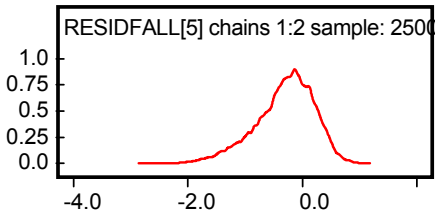

MSP chains 1:2 sample: 25000
0.01
0.0075
0.005
0.0025
0.0
0.0
500.0
1.00E+3

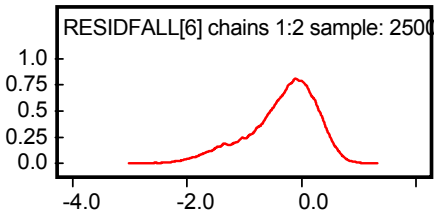

RESIDFALL[1] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
2.0
4.0
6.0
8.0

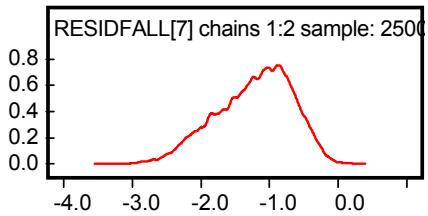

RESIDFALL[2] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

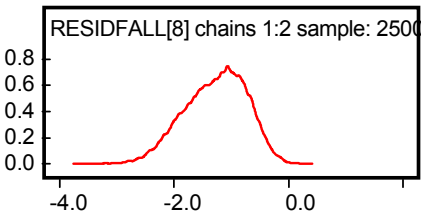

RESIDFALL[3] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0
2.0

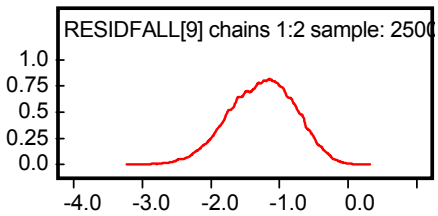

RESIDFALL[4] chains 1:2 sample: 2500
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0
1.0

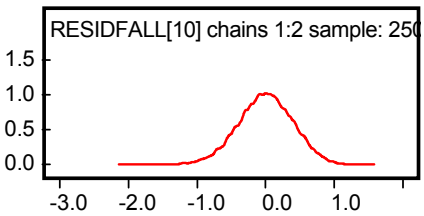

RESIDFALL[5] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

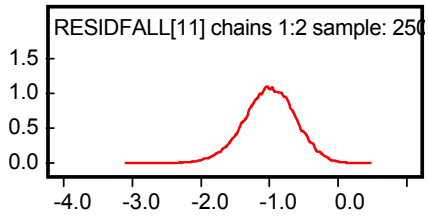

RESIDFALL[6] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

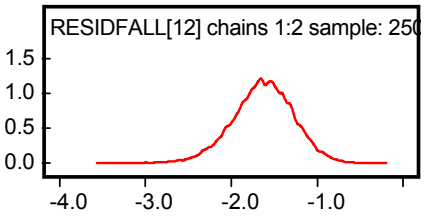

RESIDFALL[7] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-4.0
-3.0
-2.0
-1.0
0.0

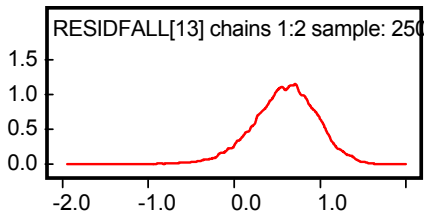

RESIDFALL[8] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-4.0
-2.0
0.0

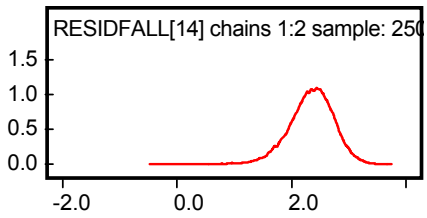

RESIDFALL[9] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-4.0
-3.0
-2.0
-1.0
0.0

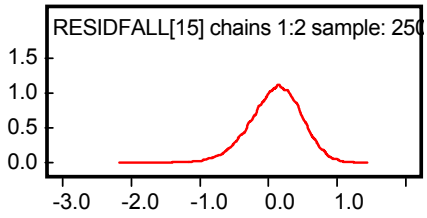

RESIDFALL[10] chains 1:2 sample: 250
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0
1.0

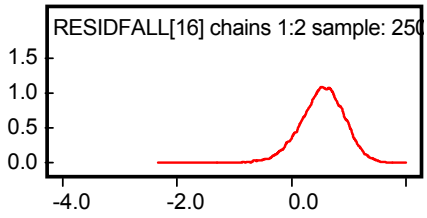

RESIDFALL[11] chains 1:2 sample: 250
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0
0.0

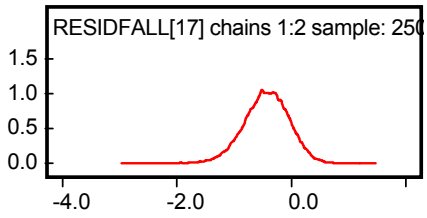

RESIDFALL[12] chains 1:2 sample: 250
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0

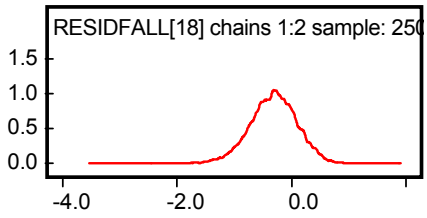

RESIDFALL[13] chains 1:2 sample: 250
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0

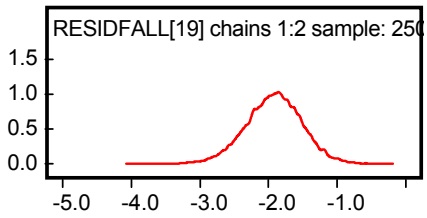

RESIDFALL[14] chains 1:2 sample: 250
1.5
1.0
0.5
0.0
-2.0
0.0
2.0

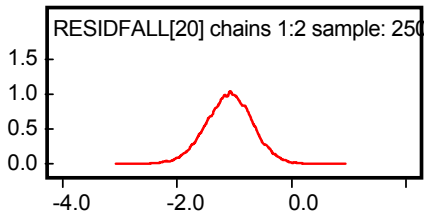

RESIDFALL[15] chains 1:2 sample: 250
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0
1.0

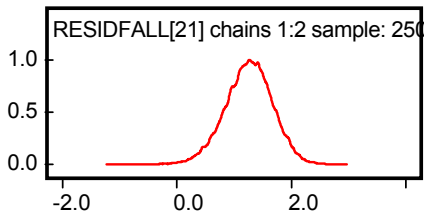

RESIDFALL[16] chains 1:2 sample: 250
1.5
1.0
0.5
0.0
-4.0
-2.0
0.0

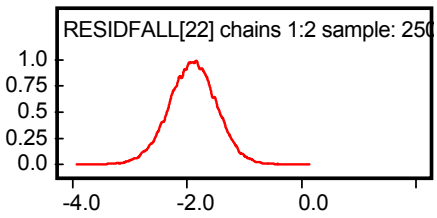

RESIDFALL[17] chains 1:2 sample: 250
1.5
1.0
0.5
0.0
-4.0
-2.0
0.0

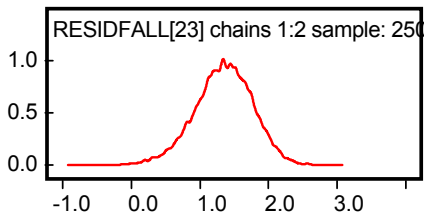

RESIDFALL[18] chains 1:2 sample: 250
1.5
1.0
0.5
0.0
-4.0
-2.0
0.0

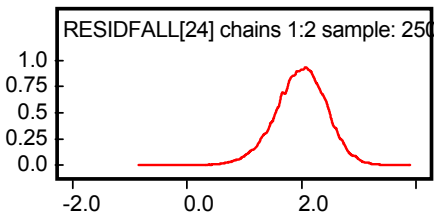

RESIDFALL[19] chains 1:2 sample: 250
1.5
1.0
0.5
0.0
-5.0
-4.0
-3.0
-2.0
-1.0

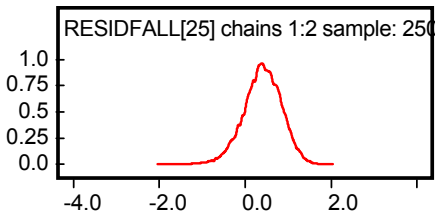

RESIDFALL[20] chains 1:2 sample: 250
1.5
1.0
0.5
0.0
-4.0
-2.0
0.0

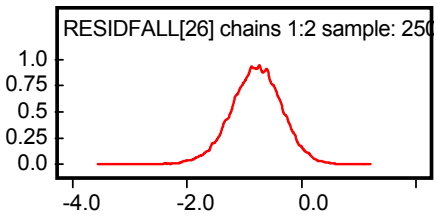

RESIDFALL[21] chains 1:2 sample: 250
1.0
0.5
0.0
-2.0
0.0
2.0

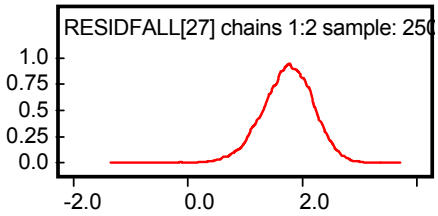

RESIDFALL[22] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

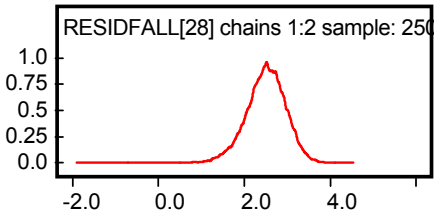

RESIDFALL[23] chains 1:2 sample: 250
1.0
0.5
0.0
-1.0
0.0
1.0
2.0
3.0

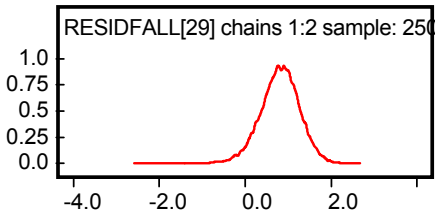

RESIDFALL[24] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-2.0
0.0
2.0

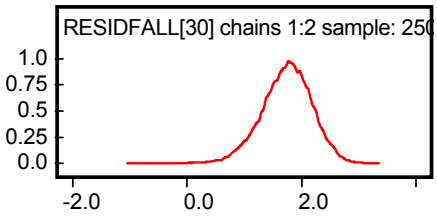

RESIDFALL[25] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0
2.0

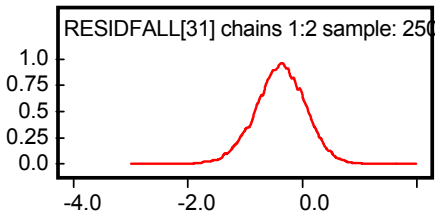

RESIDFALL[26] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

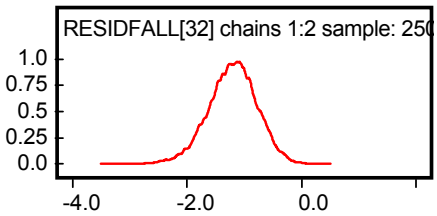

RESIDFALL[27] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-2.0
0.0
2.0

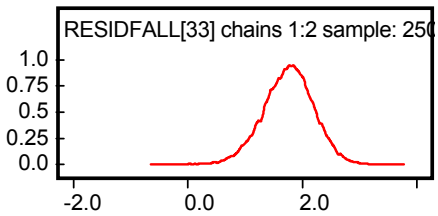

RESIDFALL[28] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-2.0
0.0
2.0
4.0

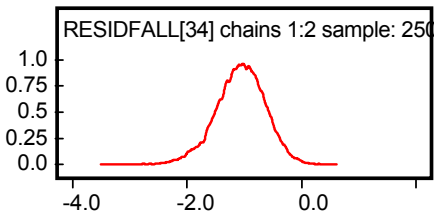

RESIDFALL[29] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0
2.0

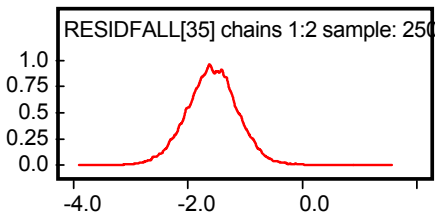

RESIDFALL[30] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-2.0
0.0
2.0

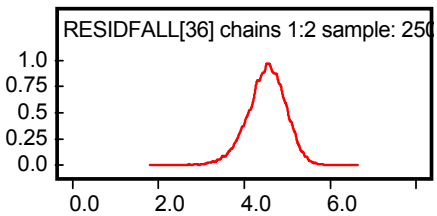

RESIDFALL[31] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

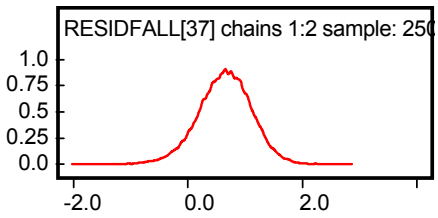

RESIDFALL[32] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

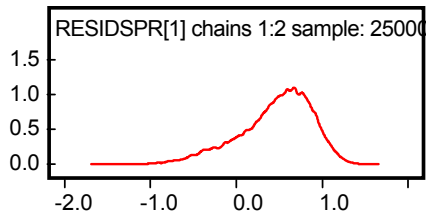

RESIDFALL[33] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-2.0
0.0
2.0

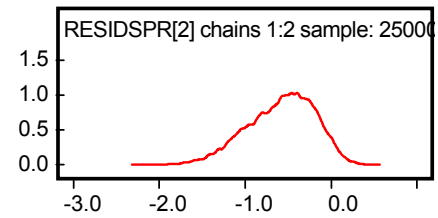

RESIDFALL[34] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

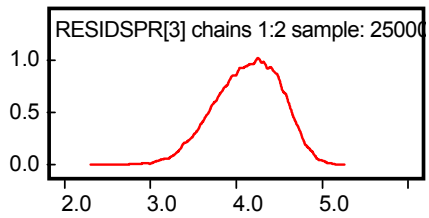

RESIDFALL[35] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

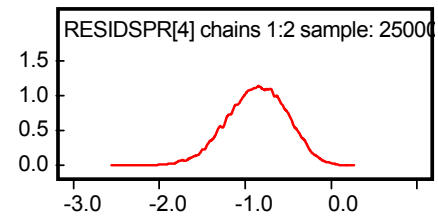

RESIDFALL[36] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
0.0
2.0
4.0
6.0

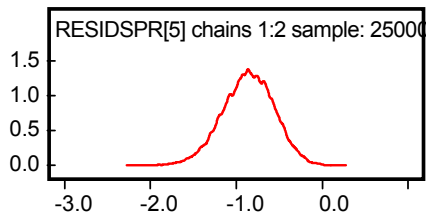

RESIDFALL[37] chains 1:2 sample: 250
1.0
0.75
0.5
0.25
0.0
-2.0
0.0
2.0

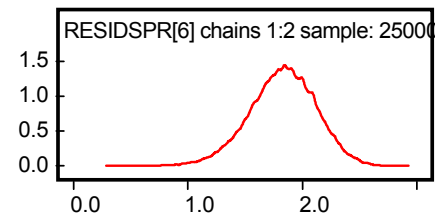

RESIDSPR[1] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0

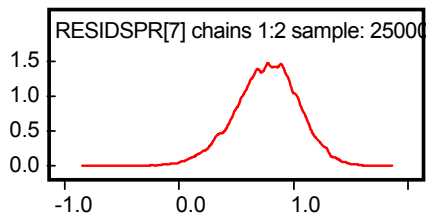

RESIDSPR[2] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0

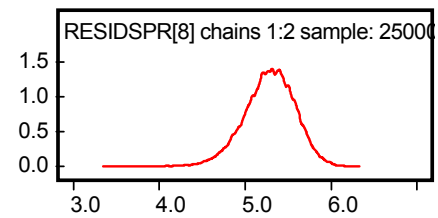

RESIDSPR[3] chains 1:2 sample: 25000
1.0
0.5
0.0
2.0
3.0
4.0
5.0

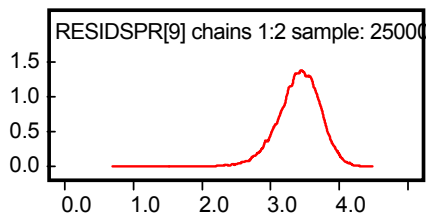

RESIDSPR[4] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0

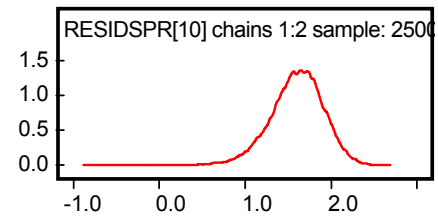

RESIDSPR[5] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0

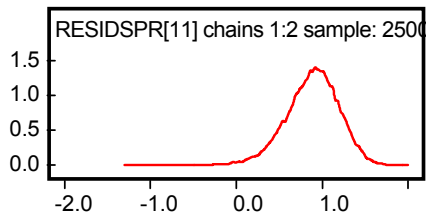

RESIDSPR[6] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
0.0
1.0
2.0

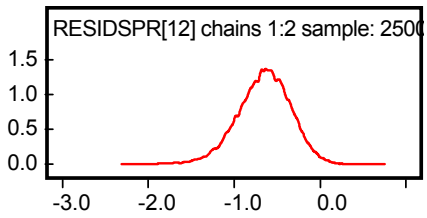

RESIDSPR[7] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
-1.0
0.0
1.0

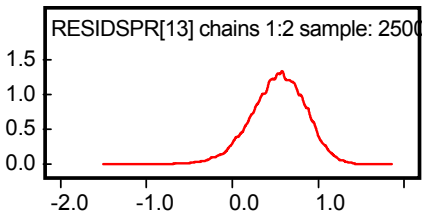

RESIDSPR[8] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
3.0
4.0
5.0
6.0

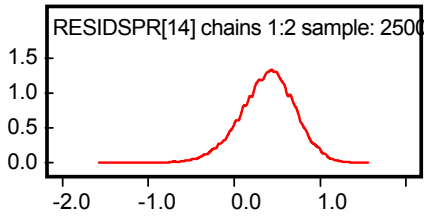

RESIDSPR[9] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
0.0
1.0
2.0
3.0
4.0

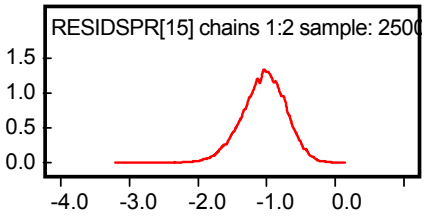

RESIDSPR[10] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-1.0
0.0
1.0
2.0

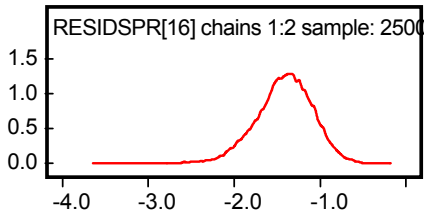

RESIDSPR[11] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0

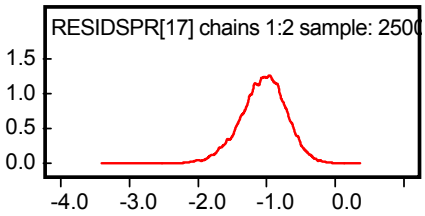

RESIDSPR[12] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0

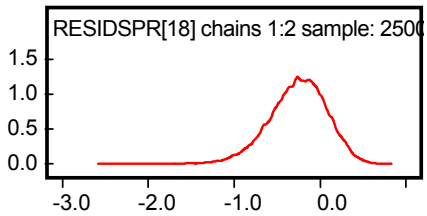

RESIDSPR[13] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0

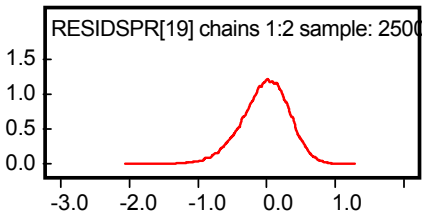

RESIDSPR[14] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0

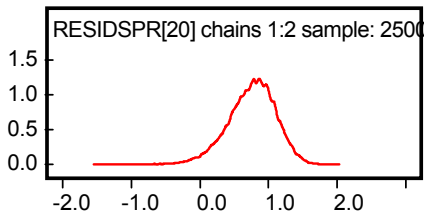

RESIDSPR[15] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0
0.0

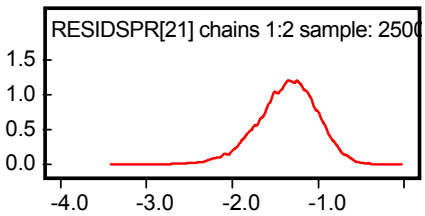

RESIDSPR[16] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0

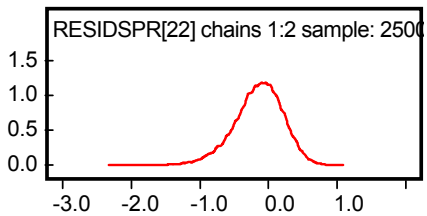

RESIDSPR[17] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0
0.0

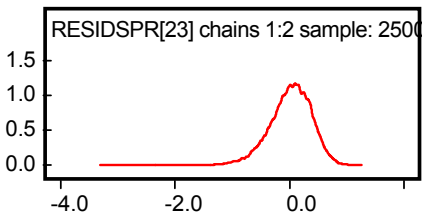

RESIDSPR[18] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0

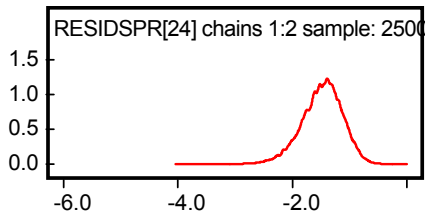

RESIDSPR[19] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0
1.0

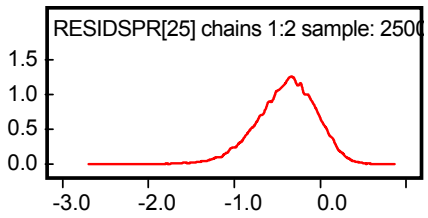

RESIDSPR[20] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0
2.0

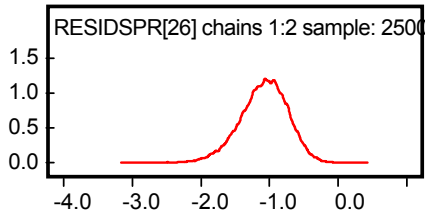

RESIDSPR[21] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0

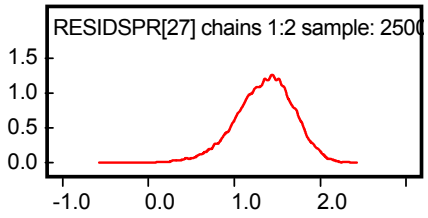

RESIDSPR[22] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0
1.0

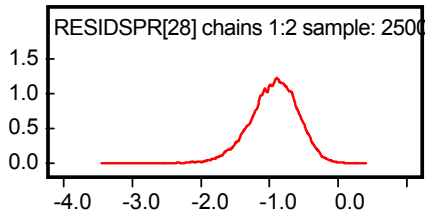

RESIDSPR[23] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-4.0
-2.0
0.0

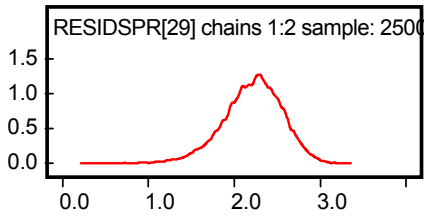

RESIDSPR[24] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-6.0
-4.0
-2.0

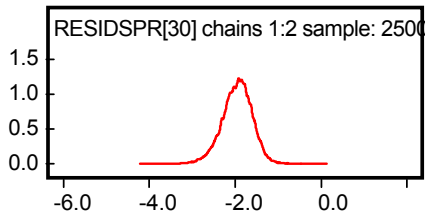

RESIDSPR[25] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0

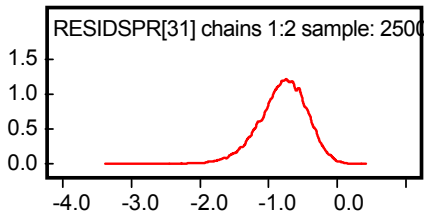

RESIDSPR[26] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0
0.0

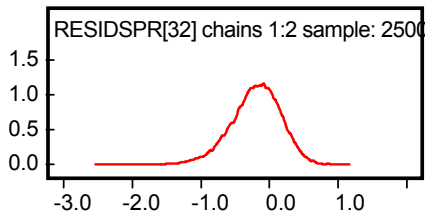

RESIDSPR[27] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-1.0
0.0
1.0
2.0

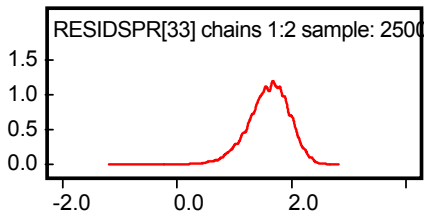

RESIDSPR[28] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0
0.0

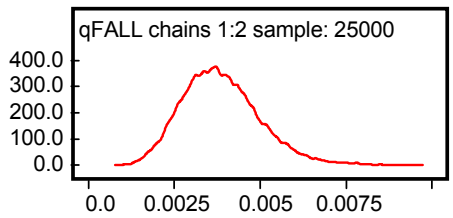

RESIDSPR[29] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
0.0
1.0
2.0
3.0

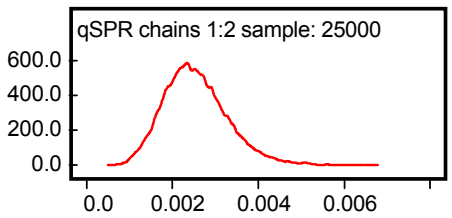

RESIDSPR[30] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-6.0
-4.0
-2.0
0.0

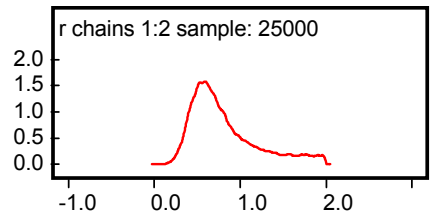

RESIDSPR[31] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0
0.0

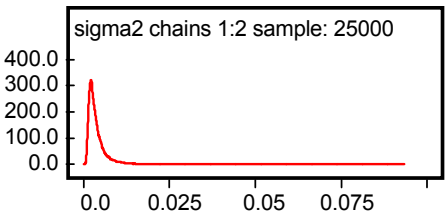

RESIDSPR[32] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0
1.0

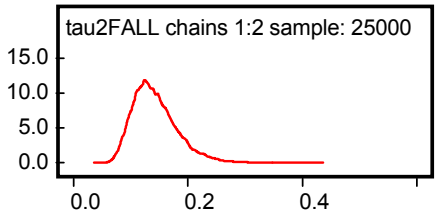

RESIDSPR[33] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-2.0
0.0
2.0

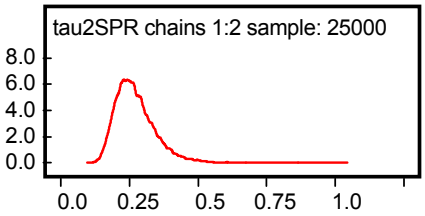

qFALL chains 1:2 sample: 25000
400.0
300.0
200.0
100.0
0.0
0.0
0.0025
0.005
0.0075


qSPR chains 1:2 sample: 25000
600.0
400.0
200.0
0.0
0.0
0.002
0.004
0.006


r chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
-1.0
0.0
1.0
2.0


sigma2 chains 1:2 sample: 25000
400.0
300.0
200.0
100.0
0.0
0.0
0.025
0.05
0.075


tau2FALL chains 1:2 sample: 25000
15.0
10.0
5.0
0.0
0.0
0.2
0.4


tau2SPR chains 1:2 sample: 25000
8.0
6.0
4.0
2.0
0.0
0.0
0.25
0.5
0.75
1.0

Appendix 1. Northern stock area BSP model for silver hake.

```
# Implementation of the surplus production model for combined whiting
# Jon Brodziak, NEFSC Nov-7-2000
# LOGNORMAL OBSERVATION ERRORS
#######################################################################

model NorthFS6300

{
# PRIOR DISTRIBUTIONS
#####################################

# PRIOR FOR K
# Lognormal with 10%Q at 200 kt and 90%Q at 1000 kt
#############################################

K ~ dlnorm(6.10304,2.53004)I(10,5000)

# PRIOR FOR R
# Uniform from [0.01,1.99]
#############################################

r ~ dunif(0.01,1.99)

# PRIOR FOR Q
# Inverse gamma with a=b=0.001
# and bounded as (0.001,10)
##############################

iqFALL ~ dgamma(0.001,0.001)I(0.1,1000);
qFALL <- 1/iqFALL;
iqSPR ~ dgamma(0.001,0.001)I(0.1,1000);
qSPR <- 1/iqSPR;


# PRIOR FOR SIGMA2 - PROCESS ERROR VARIANCE
#########################################################

isigma2 ~ dgamma(a0,b0);
sigma2 <- 1/isigma2;

# PRIOR FOR TAU2FALL/SPR - OBSERVATION ERROR VARIANCE
#########################################################

itau2FALL   ~ dgamma(c0FALL,d0FALL);
tau2FALL   <- 1/itau2FALL;
itau2SPR   ~ dgamma(c0SPR,d0SPR);
tau2SPR   <- 1/itau2SPR;

# CONDITIONAL PRIORS FOR PROPORTIONS P
# Lognormal bounded as (0.001,3)
#####################################

Pmean[1] <- 0;
P[1] ~ dlnorm(Pmean[1],isigma2) I(0.001,3)
dlow[1] <- dlowpre*L[1]
dup[1] <- duppre*L[1]
# Low precision catch error during 1963
C[1] ~ dunif(dlow[1],dup[1])

# Low precision catch error during 1964-1977
for (i in 2:15) {
```

```
    Pmean[i] <- log(max(P[i-1] + r*P[i-1]*(1-P[i-1]) - C[i-1]/K,0.001))
    P[i]  ~ dlnorm(Pmean[i],isigma2)I(0.001,3)
    dlow[i] <- dlowpre*L[i]
    dup[i] <- duppre*L[i]
    C[i] ~ dunif(dlow[i],dup[i])
    }
# High precision catch error during 1978-2000
for (i in 16:38) {
    Pmean[i] <- log(max(P[i-1] + r*P[i-1]*(1-P[i-1]) - C[i-1]/K,0.001))
    P[i]      ~ dlnorm(Pmean[i],isigma2)I(0.001,3)
    dlow[i] <- dlowcur*L[i]
    dup[i] <- dupcur*L[i]
    C[i] ~ dunif(dlow[i],dup[i])
    }


# LIKELIHOOD OF SAMPLING DISTRIBUTION
#####################################
# FALL SURVEY LIKELIHOOD & RESIDUALS
for (i in 1:N) {
     lmeanFALL[i] <- log(qFALL*K*P[i])
     lFALL[i] ~ dlnorm(lmeanFALL[i],itau2FALL)
     RESIDFALL[i] <- lFALL[i] - qFALL*K*P[i]
     }
# SPRING SURVEY LIKELIHOOD & RESIDUALS
for (i in 1:NSPR) {
     lmeanSPR[i] <- log(qSPR*K*P[i+5])
     lSPR[i] ~ dlnorm(lmeanSPR[i],itau2SPR)
     RESIDSPR[i] <- lSPR[i] - qSPR*K*P[i+5]
    }
# MANAGEMENT PARAMETERS
MSP <- r*K/4
INDEXMSPFALL <- r/(2*qFALL)
INDEXMSPSPR <- r/(2*qSPR)
HMSP <- r/2
HRATIO <- H[37]/HMSP

#  COMPUTE BIOMASS AND HARVEST RATE TRAJECTORIES
for (i in 1:N) {
     B[i] <- P[i]*K
     H[i] <- C[i]/B[i]
    }

# PROJECT YEAR 2001
P2001 <- P[N+1]+r*P[N+1]*(1-P[N+1])-C[N+1]/K
B2001 <- P2001*K
H2000 <- min(C[N+1]/(P[N+1]*K),1.0)

# END OF CODE
}
```

Data

```
# Vector L() is discard-adjusted total catch
# Vector IFALL() is autumn kg/tow index
# Vector ISPR is spring kg/tow index
# N is number of years
# Sigma is state equation error with parameters a0,b0
# TauFALL is autumn observation equation error with parameters c0FALL,d0FALL
# TauSPR is autumn observation equation error with parameters c0SPR,d0SPR
# Vector C() is discard-adjusted catch with error multiplier
# Error multiplier is bounded by [dlowpre,duppre] for 1963-1976
# and is bounded by [dlowcur,dupcur] for 1976-1999
```

```
list(
L=c(73.924,94.462,45.242,47.716,33.371,41.379,23.964,27.528,36.401,
25.224,32.083,20.680,39.874,13.634,12.457,12.609,3.415,4.730,4.416,
4.656,5.310,8.289,8.297,8.502,5.658,6.767,4.646,6.379,6.053,5.302,
4.360,4.053,2.706,3.919,2.827,2.526,4.042,4.000),
lFALL=c(25.418,4.415,6.475,4.124,2.158,2.048,2.635,3.034,2.466,6.085,
4.150,3.764,8.234,12.632,7.593,7.072,6.651,6.655,4.057,5.450,9.205,3.621,
8.583,14.194,9.836,6.312,12.549,15.246,11.889,14.245,8.117,6.925,13.161,
7.886,5.638,21.966,11.636),
lSPR=c(0.036,0.192,14.133,0.406,1.702,3.126,2.682,9.720,8.829,3.699,0.813,
1.617,4.151,2.269,1.346,1.507,1.090,2.645,3.247,3.802,1.256,3.566,1.623,
1.381,5.655,2.497,7.319,3.485,3.463,1.188,4.446,4.234,10.002),
N=37,
NSPR=33,
a0=4.0,b0=0.01,
c0FALL=2.0,d0FALL=0.01,
c0SPR=2.0,d0SPR=0.01,
dlowpre=0.9,duppre=1.10,
dlowcur=1.00,dupcur=1.10)
```

Inits

```
# Initial Condition 1
list(
P=c(0.9,0.2,0.3,0.2,0.1,0.1,0.1,0.1,0.1,0.2,0.2,0.1,0.3,0.5,0.3,0.3,0.3,
0.3,0.2,0.2,0.4,0.1,0.3,0.6,0.4,0.2,0.5,0.6,0.5,0.6,0.3,0.3,0.5,0.3,0.2,0.9,0.5,0.5),
C=c(73.924,94.462,45.242,47.716,33.371,41.379,23.964,27.528,36.401,
25.224,32.083,20.680,39.874,13.634,12.457,12.609,3.415,4.730,4.416,
4.656,5.310,8.289,8.297,8.502,5.658,6.767,4.646,6.379,6.053,5.302,
4.360,4.053,2.706,3.919,2.827,2.526,4.042,4.000),
r=0.4,
K=400,
iqFALL=10,iqSPR=20,
isigma2=100,
itau2FALL=100,itau2SPR=100)
# Initial Condition 2
list(
P=c(0.9,0.2,0.3,0.2,0.1,0.1,0.1,0.1,0.1,0.2,0.2,0.1,0.3,0.5,0.3,0.3,0.3,
0.3,0.2,0.2,0.4,0.1,0.3,0.6,0.4,0.2,0.5,0.6,0.5,0.6,0.3,0.3,0.5,0.3,0.2,0.9,0.5,0.5),
C=c(73.924,94.462,45.242,47.716,33.371,41.379,23.964,27.528,36.401,
25.224,32.083,20.680,39.874,13.634,12.457,12.609,3.415,4.730,4.416,
4.656,5.310,8.289,8.297,8.502,5.658,6.767,4.646,6.379,6.053,5.302,
4.360,4.053,2.706,3.919,2.827,2.526,4.042,4.000),
r=0.3,
K=600,
iqFALL=10,iqSPR=20,
isigma2=100,
itau2FALL=100,itau2SPR=100)
```

Results

Summary of Posterior Distribution

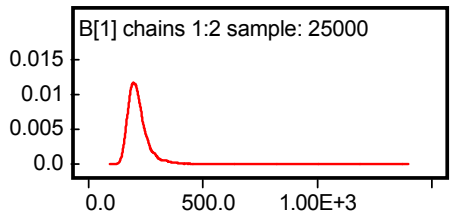
node	mean	sd	MC error	10.0%	25.0%	median	75.0%	90.0%	start	sample
B[1]	220.1	69.15	2.671	169.9	186.5	208.2	235.7	272.8	5000	25000
B[2]	136.4	43.14	1.682	94.9	109.1	127.6	152.6	185.2	5000	25000
B[3]	82.79	36.12	1.446	51.38	60.95	74.38	93.59	120.4	5000	25000

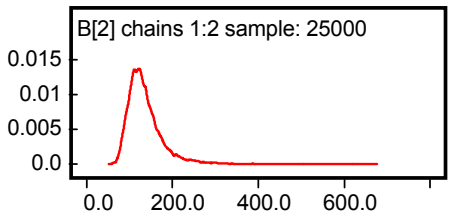
B[4]	76.32	31.17	1.245	48.06	56.83	69.12	86.75	110.6	5000	25000
B[5]	66.33	28.17	1.114	40.44	48.4	59.9	76.43	97.76	5000	25000
B[6]	68.92	27.39	1.09	43.01	51.21	62.88	79.18	100.3	5000	25000
B[7]	66.18	27.52	1.098	39.63	48.15	60.36	76.79	97.97	5000	25000
B[8]	80.21	29.3	1.151	50.96	60.7	74.68	92.64	114.2	5000	25000
B[9]	93.81	29.67	1.12	63.37	74.2	88.74	107.0	128.4	5000	25000
B[10]	102.9	31.37	1.156	71.15	83.12	97.99	116.1	137.1	5000	25000
B[11]	121.7	30.61	1.04	89.68	102.5	117.9	135.1	154.8	5000	25000
B[12]	132.7	30.2	0.9732	102.8	114.7	128.7	144.4	164.1	5000	25000
B[13]	156.4	34.71	1.154	126.4	137.4	150.6	166.8	188.5	5000	25000
B[14]	152.6	41.28	1.441	122.1	132.2	145.1	161.8	184.1	5000	25000
B[15]	172.7	34.05	1.088	143.8	153.8	166.6	182.8	203.9	5000	25000
B[16]	182.3	33.27	1.079	151.6	163.0	177.0	193.9	215.4	5000	25000
B[17]	186.3	34.27	1.143	152.5	165.4	181.1	199.8	222.2	5000	25000
B[18]	197.9	34.99	1.175	162.5	175.9	192.9	212.6	236.2	5000	25000
B[19]	196.8	36.4	1.255	158.8	173.2	192.0	213.5	238.6	5000	25000
B[20]	199.5	37.94	1.325	160.5	174.9	193.2	216.6	243.8	5000	25000
B[21]	202.6	40.59	1.458	162.2	176.5	195.5	219.7	248.8	5000	25000
B[22]	198.9	40.56	1.437	158.1	172.9	192.0	216.3	245.8	5000	25000
B[23]	201.2	44.65	1.64	158.9	173.3	192.8	218.0	250.4	5000	25000
B[24]	204.9	51.83	1.962	160.4	175.2	194.8	220.6	255.3	5000	25000
B[25]	202.9	48.64	1.803	159.2	173.8	193.2	218.8	253.2	5000	25000
B[26]	202.8	46.03	1.666	160.1	174.3	193.7	219.2	252.8	5000	25000
B[27]	206.9	52.22	1.978	161.5	176.3	196.3	222.9	259.3	5000	25000
B[28]	210.5	56.18	2.133	164.0	178.9	199.2	226.5	262.9	5000	25000
B[29]	207.6	53.06	2.001	161.1	176.5	197.1	224.5	261.0	5000	25000
B[30]	209.3	55.79	2.133	163.1	178.0	197.9	225.3	261.9	5000	25000
B[31]	206.1	49.09	1.816	161.6	176.2	196.2	222.7	258.1	5000	25000
B[32]	206.9	47.75	1.744	162.7	177.5	197.3	223.4	258.7	5000	25000
B[33]	210.2	52.57	1.991	164.7	179.5	199.7	226.1	262.0	5000	25000
B[34]	208.5	47.63	1.761	163.8	179.0	199.3	225.3	260.6	5000	25000
B[35]	205.7	47.55	1.737	160.9	176.0	196.3	222.8	258.3	5000	25000
B[36]	215.7	64.5	2.516	167.1	182.3	203.3	230.6	269.8	5000	25000
B[37]	212.7	54.17	2.048	165.0	180.7	201.8	229.1	267.7	5000	25000
C[1]	74.13	4.25	0.03111	68.15	70.5	74.22	77.79	79.95	5000	25000
C[2]	94.64	5.458	0.05112	86.98	89.93	94.75	99.38	102.1	5000	25000
C[3]	45.59	2.592	0.01745	41.84	43.42	45.77	47.85	49.03	5000	25000
C[4]	48.15	2.725	0.01835	44.17	45.9	48.35	50.54	51.71	5000	25000
C[5]	33.48	1.929	0.01282	30.76	31.82	33.53	35.17	36.1	5000	25000
C[6]	41.2	2.379	0.01681	37.97	39.14	41.1	43.22	44.57	5000	25000
C[7]	23.88	1.384	0.008796	22.0	22.68	23.83	25.06	25.84	5000	25000
C[8]	27.51	1.594	0.01069	25.31	26.12	27.5	28.88	29.73	5000	25000
C[9]	36.21	2.101	0.01346	33.4	34.39	36.11	38.02	39.22	5000	25000
C[10]	25.2	1.451	0.009123	23.21	23.95	25.18	26.45	27.23	5000	25000
C[11]	32.04	1.852	0.01094	29.5	30.43	32.03	33.64	34.63	5000	25000
C[12]	20.62	1.19	0.007581	19.0	19.58	20.6	21.64	22.29	5000	25000
C[13]	39.71	2.307	0.01509	36.6	37.68	39.64	41.69	42.97	5000	25000
C[14]	13.65	0.7838	0.004789	12.55	12.98	13.65	14.32	14.73	5000	25000
C[15]	12.46	0.7207	0.004474	11.46	11.84	12.46	13.09	13.46	5000	25000
C[16]	13.24	0.3646	0.002284	12.73	12.93	13.24	13.56	13.75	5000	25000
C[17]	3.586	0.09903	6.456E-4	3.45	3.499	3.586	3.673	3.723	5000	25000
C[18]	4.968	0.137	8.489E-4	4.779	4.848	4.968	5.087	5.158	5000	25000
C[19]	4.639	0.127	7.961E-4	4.462	4.53	4.64	4.75	4.814	5000	25000
C[20]	4.889	0.1346	8.742E-4	4.703	4.772	4.891	5.005	5.075	5000	25000
C[21]	5.576	0.1539	9.875E-4	5.362	5.442	5.577	5.711	5.788	5000	25000
C[22]	8.702	0.2396	0.001591	8.372	8.495	8.701	8.911	9.036	5000	25000
C[23]	8.714	0.239	0.001488	8.382	8.507	8.715	8.92	9.043	5000	25000
C[24]	8.927	0.2448	0.001524	8.588	8.714	8.928	9.138	9.265	5000	25000
C[25]	5.942	0.1631	0.001047	5.715	5.8	5.942	6.083	6.167	5000	25000
C[26]	7.107	0.1957	0.001271	6.836	6.937	7.107	7.277	7.379	5000	25000
C[27]	4.879	0.1343	8.451E-4	4.693	4.763	4.88	4.995	5.066	5000	25000
C[28]	6.697	0.1842	0.001216	6.442	6.536	6.697	6.856	6.952	5000	25000
C[29]	6.355	0.1751	0.001091	6.114	6.202	6.355	6.507	6.598	5000	25000
C[30]	5.568	0.1532	9.827E-4	5.354	5.437	5.567	5.701	5.779	5000	25000

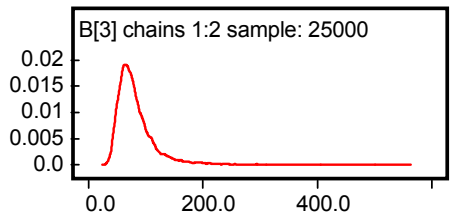
C[31]	4.578	0.1264	8.077E-4	4.403	4.467	4.577	4.688	4.753	5000	25000
C[32]	4.256	0.1172	7.079E-4	4.093	4.153	4.256	4.359	4.417	5000	25000
C[33]	2.841	0.07793	4.458E-4	2.733	2.774	2.842	2.909	2.949	5000	25000
C[34]	4.114	0.1134	7.542E-4	3.957	4.016	4.114	4.212	4.273	5000	25000
C[35]	2.967	0.08195	5.278E-4	2.855	2.896	2.967	3.038	3.082	5000	25000
C[36]	2.653	0.07343	4.572E-4	2.551	2.589	2.654	2.717	2.754	5000	25000
C[37]	4.244	0.1162	6.905E-4	4.083	4.144	4.243	4.344	4.405	5000	25000
C[38]	4.2	0.1155	7.897E-4	4.04	4.1	4.2	4.301	4.36	5000	25000
H[1]	0.3537	0.06831	0.002574	0.2701	0.313	0.3563	0.3974	0.4365	5000	25000
H[2]	0.7461	0.186	0.007714	0.5137	0.6234	0.7418	0.8634	0.9832	5000	25000
H[3]	0.6234	0.2	0.008395	0.3757	0.4862	0.6135	0.7473	0.8849	5000	25000
H[4]	0.708	0.2216	0.009357	0.4332	0.5538	0.6967	0.8482	0.9993	5000	25000
H[5]	0.5731	0.1911	0.008034	0.3407	0.4379	0.5588	0.6916	0.8292	5000	25000
H[6]	0.6702	0.213	0.00893	0.4096	0.5207	0.6546	0.8056	0.9556	5000	25000
H[7]	0.4108	0.1421	0.005884	0.2428	0.3092	0.3952	0.4959	0.6044	5000	25000
H[8]	0.3807	0.1199	0.004796	0.2394	0.2958	0.3684	0.4536	0.5413	5000	25000
H[9]	0.4186	0.1172	0.004451	0.2799	0.3375	0.4073	0.4887	0.5733	5000	25000
H[10]	0.2638	0.07112	0.002539	0.1815	0.2159	0.2568	0.3044	0.3566	5000	25000
H[11]	0.2773	0.06312	0.00207	0.2044	0.2357	0.2716	0.3138	0.3589	5000	25000
H[12]	0.1618	0.03255	9.959E-4	0.1238	0.1411	0.1599	0.1807	0.203	5000	25000
H[13]	0.2626	0.04622	0.001356	0.2077	0.2351	0.2627	0.2908	0.3187	5000	25000
H[14]	0.09315	0.01697	5.146E-4	0.07282	0.08326	0.09367	0.1038	0.1136	5000	25000
H[15]	0.07411	0.01158	3.235E-4	0.06009	0.06733	0.07453	0.08149	0.08799	5000	25000
H[16]	0.07448	0.01109	3.48E-4	0.06129	0.0681	0.07468	0.08137	0.08773	5000	25000
H[17]	0.01977	0.003067	1.008E-4	0.01605	0.01788	0.01978	0.02173	0.02358	5000	25000
H[18]	0.02575	0.003964	1.319E-4	0.02093	0.02332	0.02577	0.02828	0.03064	5000	25000
H[19]	0.02427	0.004094	1.421E-4	0.01937	0.02166	0.02413	0.02682	0.0293	5000	25000
H[20]	0.02527	0.004255	1.493E-4	0.01996	0.02254	0.02527	0.02798	0.03059	5000	25000
H[21]	0.02843	0.004874	1.739E-4	0.02238	0.0253	0.02848	0.03163	0.03451	5000	25000
H[22]	0.0453	0.008138	2.921E-4	0.03527	0.04012	0.0453	0.0504	0.05519	5000	25000
H[23]	0.04498	0.008159	3.014E-4	0.03471	0.03986	0.04516	0.05036	0.05505	5000	25000
H[24]	0.04547	0.00846	3.158E-4	0.03487	0.04039	0.0458	0.051	0.05576	5000	25000
H[25]	0.03051	0.005653	2.09E-4	0.02337	0.02704	0.03073	0.03423	0.03741	5000	25000
H[26]	0.03642	0.006618	2.432E-4	0.02803	0.03237	0.03664	0.04077	0.04447	5000	25000
H[27]	0.02463	0.004648	1.743E-4	0.01885	0.02184	0.02481	0.02771	0.03033	5000	25000
H[28]	0.0333	0.006322	2.359E-4	0.02535	0.02954	0.03359	0.03745	0.04098	5000	25000
H[29]	0.03202	0.006155	2.313E-4	0.02426	0.02825	0.03222	0.03606	0.03956	5000	25000
H[30]	0.02785	0.005299	2.003E-4	0.0212	0.02466	0.0281	0.03133	0.03424	5000	25000
H[31]	0.02315	0.004333	1.61E-4	0.01767	0.02049	0.02331	0.02598	0.02839	5000	25000
H[32]	0.02141	0.003949	1.462E-4	0.0164	0.01898	0.02154	0.024	0.02624	5000	25000
H[33]	0.01411	0.002634	9.832E-5	0.0108	0.01253	0.01422	0.01583	0.01729	5000	25000
H[34]	0.02052	0.003781	1.406E-4	0.01569	0.01822	0.02064	0.023	0.02519	5000	25000
H[35]	0.01503	0.00282	1.047E-4	0.01144	0.01328	0.0151	0.01686	0.0185	5000	25000
H[36]	0.01293	0.002487	9.398E-5	0.009797	0.01147	0.01305	0.01456	0.01593	5000	25000
H[37]	0.02088	0.004041	1.524E-4	0.01579	0.01848	0.02102	0.02352	0.02581	5000	25000
HMSP	0.4457	0.1158	0.00479	0.3028	0.3681	0.4424	0.5192	0.5941	5000	25000
HRATIO	0.04804	0.006704	2.002E-4	0.04051	0.04371	0.04739	0.05162	0.05626	5000	25000
INDEXMSPFALL	9.631	1.384	0.0385	7.959	8.745	9.586	10.47	11.33	5000	25000
INDEXMSPSPR	31.99	7.124	0.1464	23.41	27.0	31.42	36.37	41.28	5000	25000
K	214.0	49.3	1.932	169.8	184.1	203.7	229.7	265.6	5000	25000
MSP	45.34	5.428	0.191	38.92	42.0	45.25	48.54	51.65	5000	25000
RESIDFALL[1]	15.7	1.364	0.03794	14.43	15.14	15.82	16.46	17.0	5000	25000
RESIDFALL[2]	-1.538	0.7623	0.02021	-2.509	-1.994	-1.487	-1.015	-0.6265	5000	25000
RESIDFALL[3]	2.931	0.676	0.02436	2.075	2.578	3.024	3.391	3.687	5000	25000
RESIDFALL[4]	0.8448	0.583	0.02064	0.0846	0.5224	0.9164	1.25	1.513	5000	25000
RESIDFALL[5]	-0.6842	0.5559	0.02025	-1.411	-0.9918	-0.6127	-0.2929	-0.04708	5000	25000
RESIDFALL[6]	-0.919	0.5396	0.01926	-1.63	-1.233	-0.8541	-0.5393	-0.2912	5000	25000
RESIDFALL[7]	-0.2042	0.5715	0.02065	-0.9635	-0.5432	-0.1408	0.2057	0.4695	5000	25000
RESIDFALL[8]	-0.4414	0.6174	0.01969	-1.257	-0.813	-0.3829	-0.003383	0.2982	5000	25000
RESIDFALL[9]	-1.643	0.6871	0.01901	-2.55	-2.059	-1.582	-1.16	-0.8221	5000	25000
RESIDFALL[10]	1.557	0.7861	0.02066	0.5204	1.075	1.639	2.122	2.49	5000	25000
RESIDFALL[11]	-1.266	0.9239	0.02536	-2.483	-1.828	-1.172	-0.6024	-0.1706	5000	25000
RESIDFALL[12]	-2.168	0.9464	0.02647	-3.409	-2.782	-2.124	-1.497	-0.9914	5000	25000
RESIDFALL[13]	1.231	1.058	0.02995	-0.135	0.5481	1.256	1.957	2.567	5000	25000

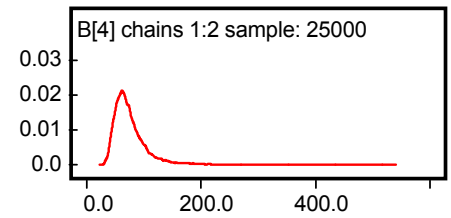
RESIDFALL[14]	5.839	1.007	0.02666	4.685	5.265	5.864	6.464	7.021	5000	25000
RESIDFALL[15]	-0.1548	1.078	0.03081	-1.503	-0.8502	-0.1488	0.5481	1.198	5000	25000
RESIDFALL[16]	-1.105	1.036	0.02781	-2.388	-1.766	-1.12	-0.4386	0.1965	5000	25000
RESIDFALL[17]	-1.689	0.9956	0.02438	-2.922	-2.327	-1.694	-1.061	-0.431	5000	25000
RESIDFALL[18]	-2.212	1.065	0.02633	-3.525	-2.896	-2.215	-1.529	-0.8943	5000	25000
RESIDFALL[19]	-4.747	1.043	0.02401	-6.026	-5.406	-4.758	-4.115	-3.506	5000	25000
RESIDFALL[20]	-3.46	1.012	0.02183	-4.709	-4.102	-3.453	-2.818	-2.227	5000	25000
RESIDFALL[21]	0.1731	0.9862	0.01856	-1.064	-0.4464	0.1963	0.8183	1.373	5000	25000
RESIDFALL[22]	-5.243	0.9954	0.02072	-6.468	-5.858	-5.241	-4.641	-4.072	5000	25000
RESIDFALL[23]	-0.3525	0.9233	0.01424	-1.537	-0.937	-0.3146	0.275	0.7797	5000	25000
RESIDFALL[24]	5.119	0.9973	0.01838	3.901	4.545	5.188	5.781	6.275	5000	25000
RESIDFALL[25]	0.8431	0.9337	0.0144	-0.349	0.2645	0.8952	1.479	1.971	5000	25000
RESIDFALL[26]	-2.692	0.9333	0.01486	-3.883	-3.275	-2.66	-2.066	-1.542	5000	25000
RESIDFALL[27]	3.391	0.9793	0.01666	2.154	2.809	3.459	4.049	4.564	5000	25000
RESIDFALL[28]	5.939	1.049	0.02013	4.678	5.359	6.021	6.627	7.139	5000	25000
RESIDFALL[29]	2.706	0.9809	0.0163	1.465	2.119	2.775	3.365	3.877	5000	25000
RESIDFALL[30]	4.99	1.035	0.01997	3.743	4.418	5.073	5.668	6.186	5000	25000
RESIDFALL[31]	-1.017	0.9469	0.01405	-2.234	-1.602	-0.957	-0.3792	0.1309	5000	25000
RESIDFALL[32]	-2.254	0.9544	0.01471	-3.469	-2.84	-2.207	-1.613	-1.087	5000	25000
RESIDFALL[33]	3.853	0.9993	0.01702	2.602	3.256	3.924	4.522	5.044	5000	25000
RESIDFALL[34]	-1.369	0.9745	0.01431	-2.608	-1.971	-1.324	-0.7075	-0.1758	5000	25000
RESIDFALL[35]	-3.484	0.9574	0.01483	-4.698	-4.09	-3.45	-2.851	-2.317	5000	25000
RESIDFALL[36]	12.45	1.208	0.03101	11.19	11.88	12.55	13.17	13.7	5000	25000
RESIDFALL[37]	2.231	1.007	0.01605	0.9684	1.642	2.298	2.907	3.44	5000	25000
RESIDSPR[1]	-0.8847	0.2384	0.006688	-1.199	-1.015	-0.8495	-0.7159	-0.6151	5000	25000
RESIDSPR[2]	-0.689	0.2405	0.007061	-1.007	-0.8231	-0.6544	-0.518	-0.4149	5000	25000
RESIDSPR[3]	13.06	0.2684	0.006805	12.7	12.9	13.09	13.25	13.37	5000	25000
RESIDSPR[4]	-0.8661	0.3004	0.006385	-1.259	-1.042	-0.8327	-0.6518	-0.5122	5000	25000
RESIDSPR[5]	0.3011	0.3328	0.00657	-0.1353	0.1059	0.3378	0.5376	0.6941	5000	25000
RESIDSPR[6]	1.452	0.3876	0.007422	0.9465	1.22	1.494	1.728	1.91	5000	25000
RESIDSPR[7]	0.8486	0.4079	0.007489	0.3184	0.598	0.8859	1.138	1.339	5000	25000
RESIDSPR[8]	7.556	0.4696	0.008341	6.94	7.273	7.595	7.885	8.124	5000	25000
RESIDSPR[9]	6.729	0.458	0.007879	6.156	6.473	6.771	7.041	7.261	5000	25000
RESIDSPR[10]	1.304	0.5026	0.008454	0.6496	1.006	1.346	1.652	1.91	5000	25000
RESIDSPR[11]	-1.715	0.5118	0.007578	-2.381	-2.02	-1.672	-1.362	-1.1	5000	25000
RESIDSPR[12]	-0.9617	0.5129	0.006647	-1.63	-1.267	-0.9181	-0.6041	-0.3488	5000	25000
RESIDSPR[13]	1.409	0.5488	0.007146	0.6938	1.086	1.461	1.792	2.056	5000	25000
RESIDSPR[14]	-0.4539	0.5446	0.006859	-1.161	-0.7763	-0.4084	-0.08205	0.1894	5000	25000
RESIDSPR[15]	-1.41	0.5439	0.006202	-2.119	-1.727	-1.359	-1.031	-0.7677	5000	25000
RESIDSPR[16]	-1.287	0.5467	0.005293	-1.995	-1.606	-1.236	-0.9055	-0.6397	5000	25000
RESIDSPR[17]	-1.652	0.5424	0.006202	-2.36	-1.973	-1.602	-1.279	-1.017	5000	25000
RESIDSPR[18]	-0.12	0.5352	0.004402	-0.8241	-0.4374	-0.06624	0.2584	0.5117	5000	25000
RESIDSPR[19]	0.4381	0.5585	0.006206	-0.2847	0.1208	0.4992	0.827	1.088	5000	25000
RESIDSPR[20]	1.018	0.545	0.004793	0.312	0.6988	1.078	1.398	1.659	5000	25000
RESIDSPR[21]	-1.53	0.5418	0.004688	-2.237	-1.849	-1.473	-1.153	-0.8929	5000	25000
RESIDSPR[22]	0.7311	0.5605	0.005862	0.005683	0.4027	0.7941	1.126	1.388	5000	25000
RESIDSPR[23]	-1.258	0.5813	0.006954	-2.004	-1.584	-1.189	-0.8584	-0.5817	5000	25000
RESIDSPR[24]	-1.461	0.5617	0.005838	-2.192	-1.792	-1.402	-1.067	-0.8071	5000	25000
RESIDSPR[25]	2.79	0.572	0.006852	2.051	2.465	2.854	3.187	3.459	5000	25000
RESIDSPR[26]	-0.3304	0.5535	0.004733	-1.055	-0.6486	-0.2767	0.05621	0.3275	5000	25000
RESIDSPR[27]	4.478	0.5532	0.004832	3.756	4.149	4.534	4.867	5.128	5000	25000
RESIDSPR[28]	0.604	0.5682	0.00575	-0.1336	0.2763	0.6636	0.9996	1.27	5000	25000
RESIDSPR[29]	0.5995	0.5563	0.004714	-0.1258	0.2759	0.6581	0.9885	1.252	5000	25000
RESIDSPR[30]	-1.635	0.553	0.005015	-2.359	-1.958	-1.581	-1.249	-0.9827	5000	25000
RESIDSPR[31]	1.499	0.6204	0.01051	0.7435	1.175	1.576	1.914	2.189	5000	25000
RESIDSPR[32]	1.322	0.5777	0.005773	0.5681	0.9906	1.386	1.727	1.997	5000	25000
RESIDSPR[33]	7.113	0.593	0.007156	6.372	6.789	7.179	7.518	7.786	5000	25000
qFALL	0.04607	0.00921	3.525E-4	0.03447	0.04018	0.04615	0.05213	0.05763	5000	25000
qSPR	0.01422	0.003544	1.008E-4	0.009921	0.01178	0.01398	0.01641	0.01883	5000	25000
r	0.8915	0.2317	0.00958	0.6055	0.7362	0.8848	1.038	1.188	5000	25000
sigma2	0.00475	0.01176	4.411E-4	0.001567	0.002085	0.002979	0.004527	0.007287	5000	25000
tau2FALL	0.1886	0.04904	6.777E-4	0.1347	0.1554	0.182	0.2152	0.2509	5000	25000
tau2SPR	1.038	0.2644	0.002523	0.7435	0.8537	0.9999	1.179	1.384	5000	25000

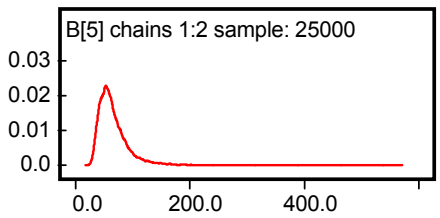
Marginal Distributions

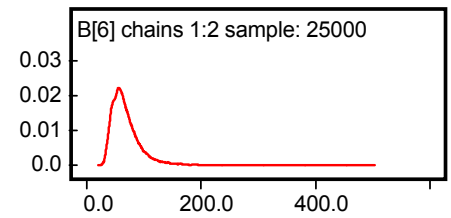


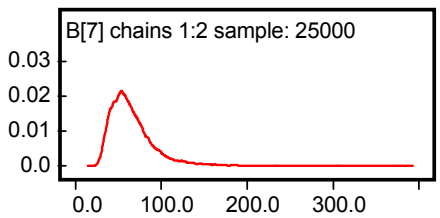


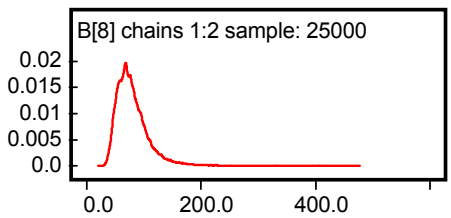


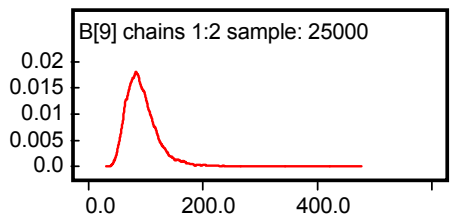


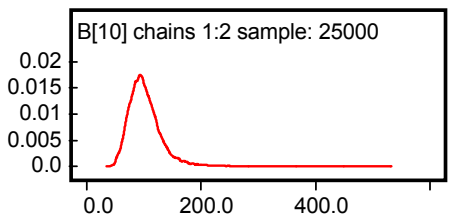


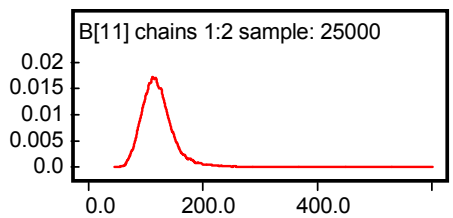


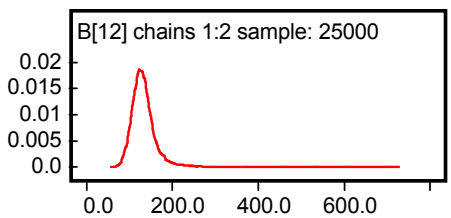


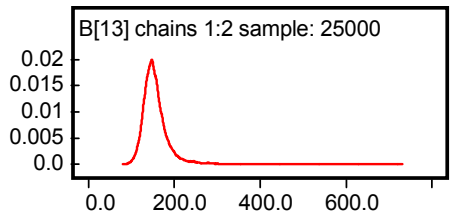








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0.01
0.005
0.0
0.0
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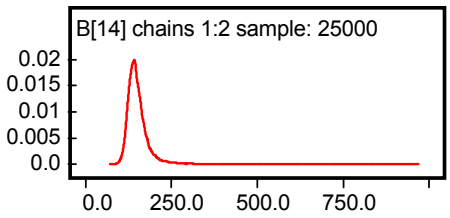
400.0
600.0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0.01
0.005
0.0
0.0
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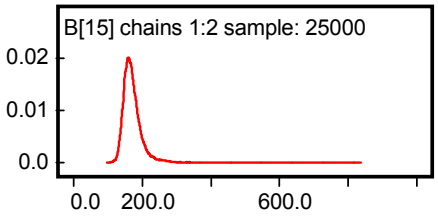
500.0
750.0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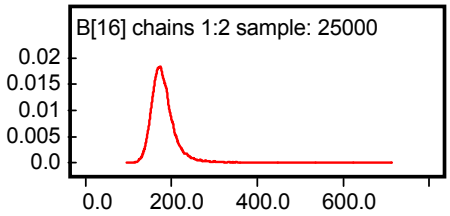
200.0
600.0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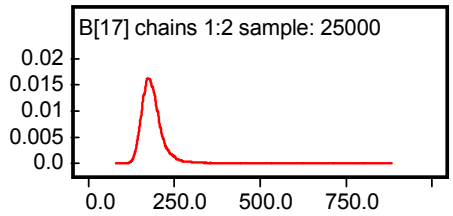
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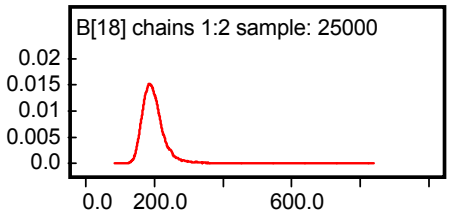
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0.005
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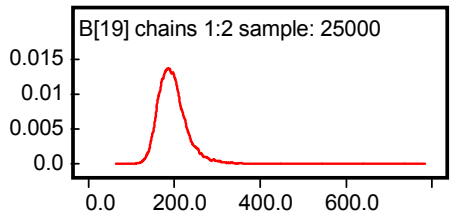
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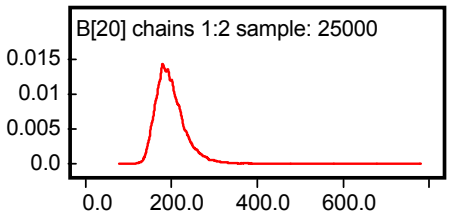
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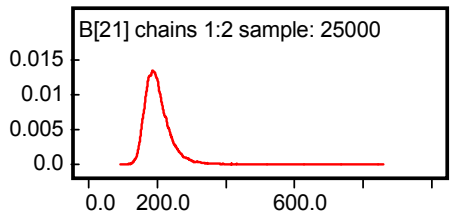
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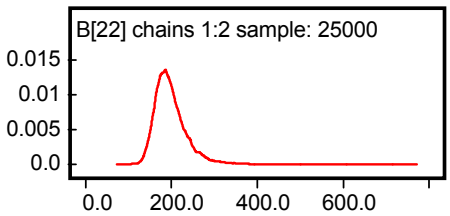
600.0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0.005
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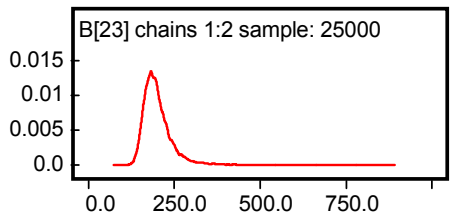
0.0
200.0
400.0
600.0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0.01
0.005
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0.0
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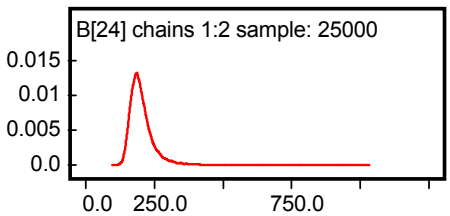
500.0
750.0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0.005
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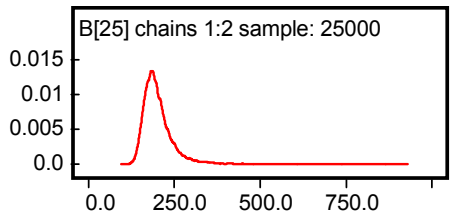
250.0
750.0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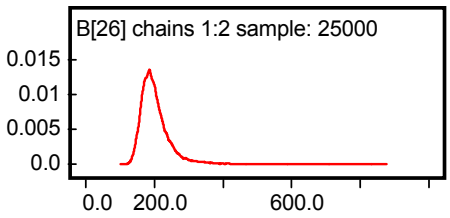
500.0
750.0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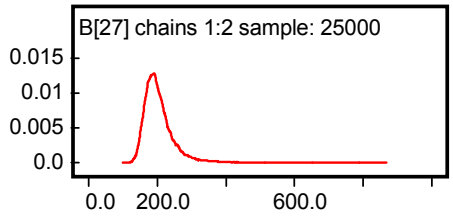
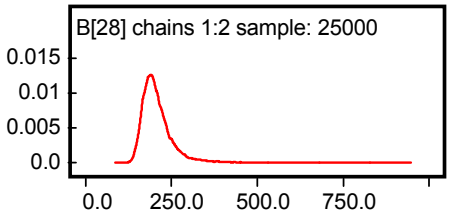
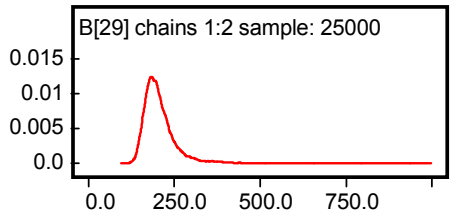
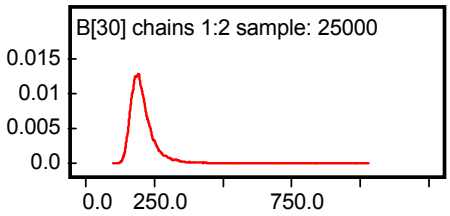
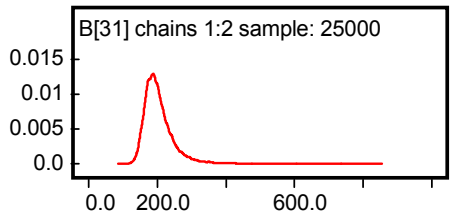
0.0
200.0
600.0

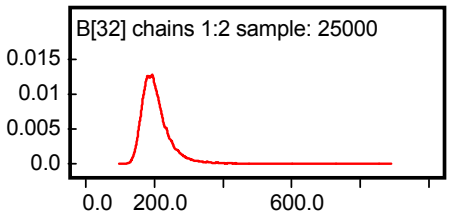

B[27] chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
0.0
200.0
600.0

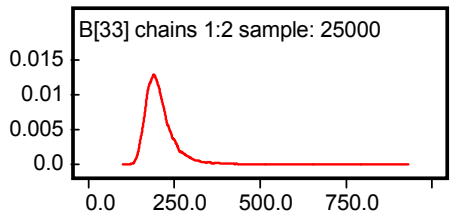

B[28] chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
0.0
250.0
500.0
750.0

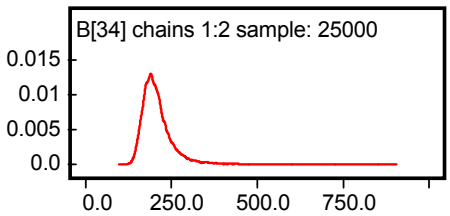

B[29] chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
0.0
250.0
500.0
750.0

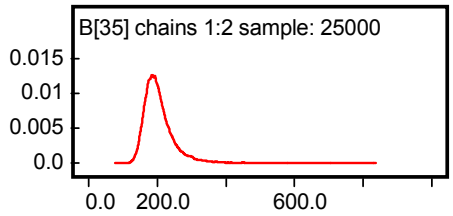

B[30] chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
0.0
250.0
750.0

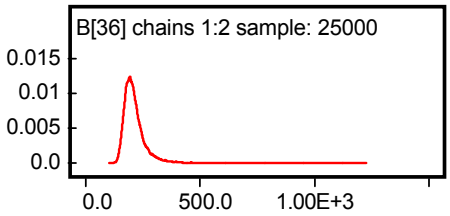

B[31] chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
0.0
200.0
600.0

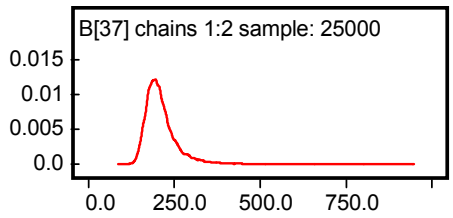

B[32] chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
0.0
200.0
600.0

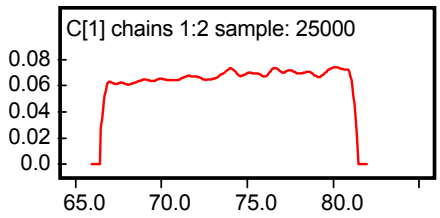

B[33] chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
0.0
250.0
500.0
750.0

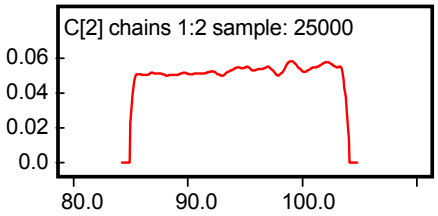

B[34] chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
0.0
250.0
500.0
750.0

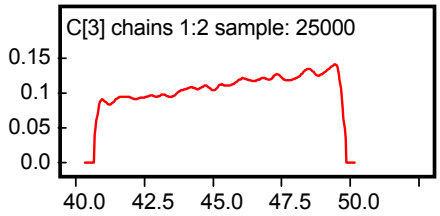

B[35] chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
0.0
200.0
600.0

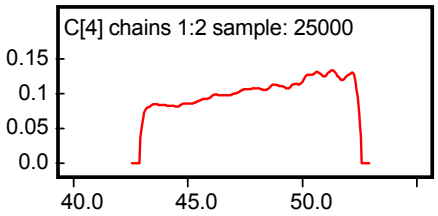

B[36] chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
0.0
500.0
1.00E+3

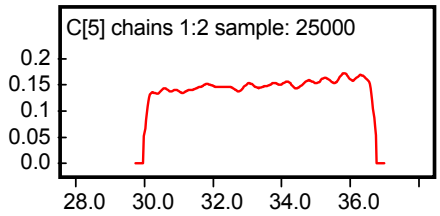

B[37] chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
0.0
250.0
500.0
750.0

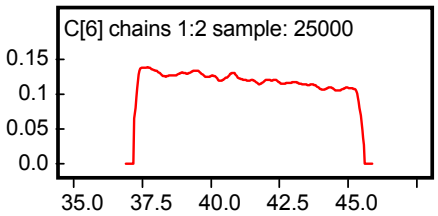

C[1] chains 1:2 sample: 25000
0.08
0.06
0.04
0.02
0.0
65.0
70.0
75.0
80.0

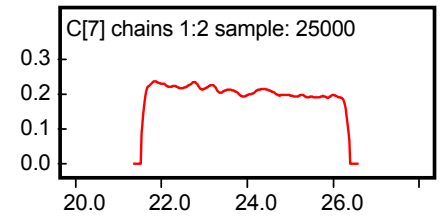

C[2] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
80.0
90.0
100.0

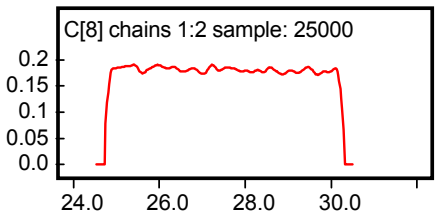

C[3] chains 1:2 sample: 25000
0.15
0.1
0.05
0.0
40.0
42.5
45.0
47.5
50.0

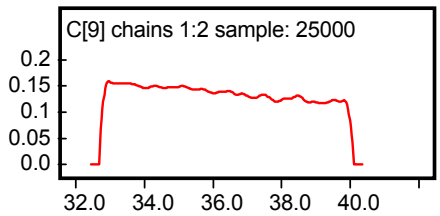

C[4] chains 1:2 sample: 25000
0.15
0.1
0.05
0.0
40.0
45.0
50.0

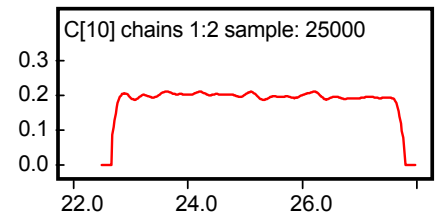

C[5] chains 1:2 sample: 25000
0.2
0.15
0.1
0.05
0.0
28.0
30.0
32.0
34.0
36.0

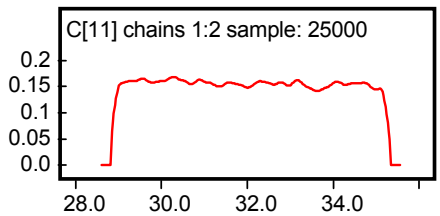

C[6] chains 1:2 sample: 25000
0.15
0.1
0.05
0.0
35.0
37.5
40.0
42.5
45.0

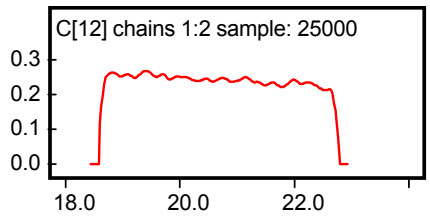

C[7] chains 1:2 sample: 25000
0.3
0.2
0.1
0.0
20.0
22.0
24.0
26.0

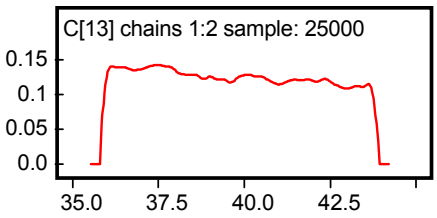

C[8] chains 1:2 sample: 25000
0.2
0.15
0.1
0.05
0.0
24.0
26.0
28.0
30.0

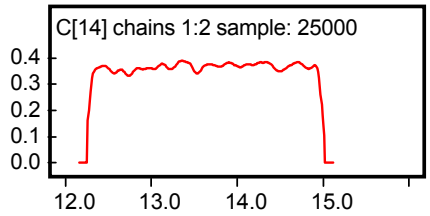

C[9] chains 1:2 sample: 25000
0.2
0.15
0.1
0.05
0.0
32.0
34.0
36.0
38.0
40.0

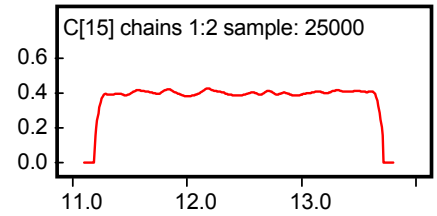

C[10] chains 1:2 sample: 25000
0.3
0.2
0.1
0.0
22.0
24.0
26.0

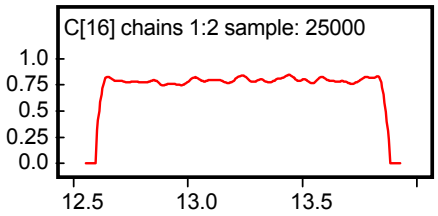

C[11] chains 1:2 sample: 25000
0.2
0.15
0.1
0.05
0.0
28.0
30.0
32.0
34.0

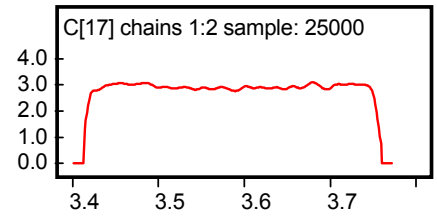

C[12] chains 1:2 sample: 25000
0.3
0.2
0.1
0.0
18.0
20.0
22.0

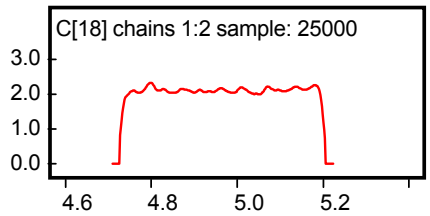

C[13] chains 1:2 sample: 25000
0.15
0.1
0.05
0.0
35.0
37.5
40.0
42.5

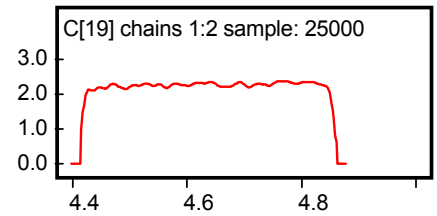

C[14] chains 1:2 sample: 25000
0.4
0.3
0.2
0.1
0.0
12.0
13.0
14.0
15.0

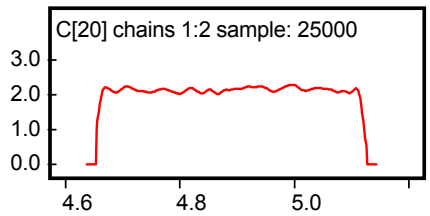

C[15] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
11.0
12.0
13.0

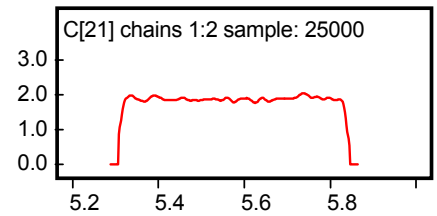

C[16] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
12.5
13.0
13.5

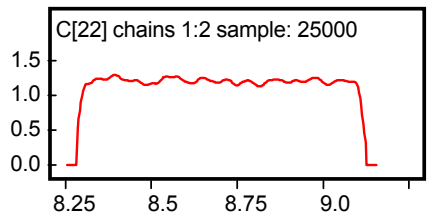

C[17] chains 1:2 sample: 25000
4.0
3.0
2.0
1.0
0.0
3.4
3.5
3.6
3.7

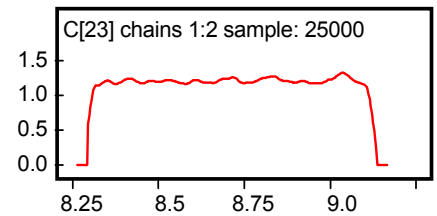

C[18] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
4.6
4.8
5.0
5.2

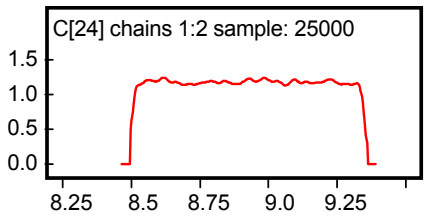

C[19] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
4.4
4.6
4.8

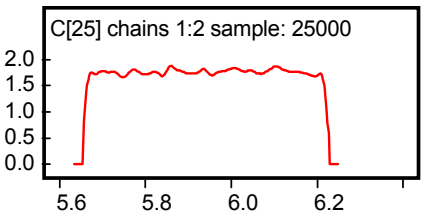

C[20] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
4.6
4.8
5.0

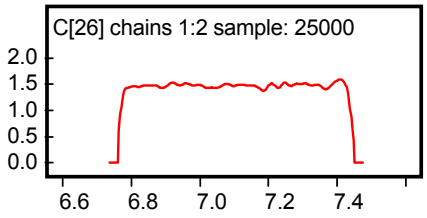

C[21] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
5.2
5.4
5.6
5.8

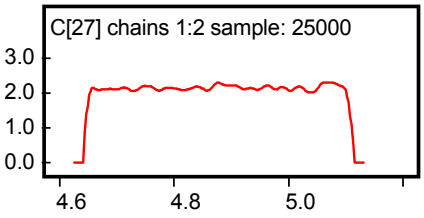

C[22] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
8.25
8.5
8.75
9.0

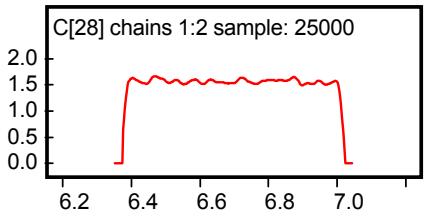

C[23] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
8.25
8.5
8.75
9.0

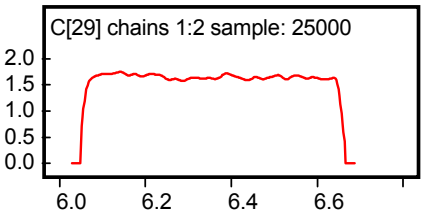

C[24] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
8.25
8.5
8.75
9.0
9.25

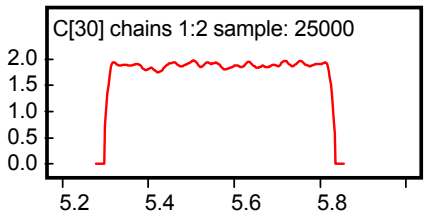

C[25] chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
5.6
5.8
6.0
6.2

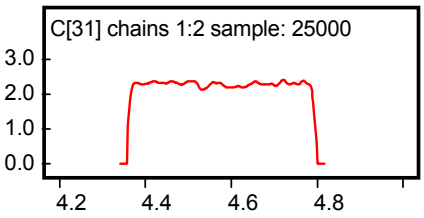

C[26] chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
6.6
6.8
7.0
7.2
7.4

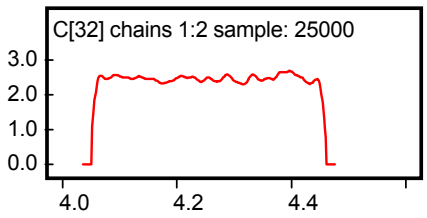

C[27] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
4.6
4.8
5.0

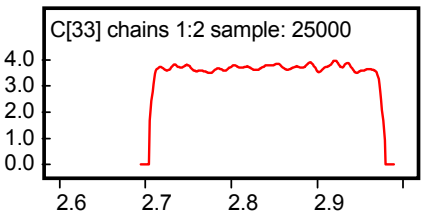

C[28] chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
6.2
6.4
6.6
6.8
7.0

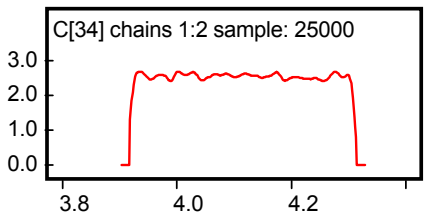

C[29] chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
6.0
6.2
6.4
6.6

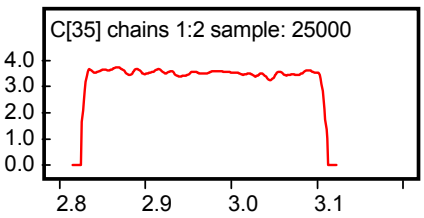

C[30] chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
5.2
5.4
5.6
5.8

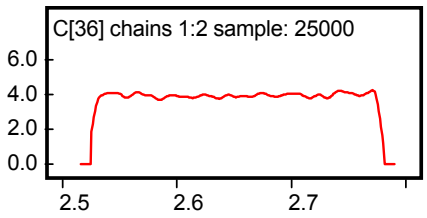

C[31] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
4.2
4.4
4.6
4.8

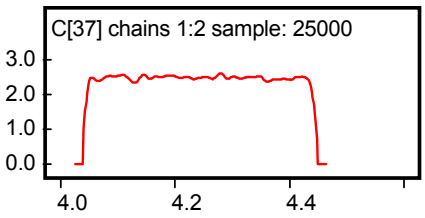

C[32] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
4.0
4.2
4.4

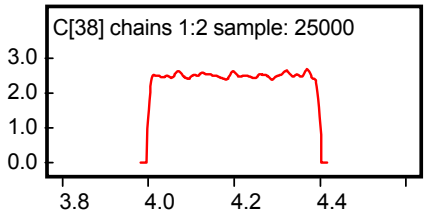

C[33] chains 1:2 sample: 25000
4.0
3.0
2.0
1.0
0.0
2.6
2.7
2.8
2.9

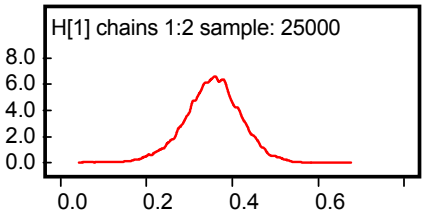

C[34] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
3.8
4.0
4.2

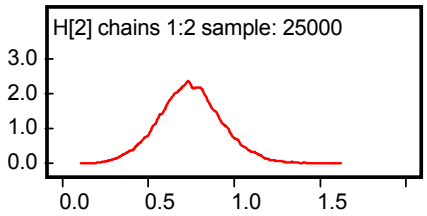

C[35] chains 1:2 sample: 25000
4.0
3.0
2.0
1.0
0.0
2.8
2.9
3.0
3.1

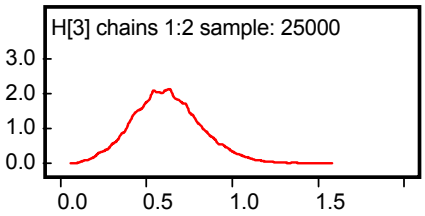

C[36] chains 1:2 sample: 25000
6.0
4.0
2.0
0.0
2.5
2.6
2.7

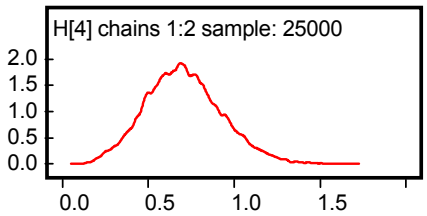

C[37] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
4.0
4.2
4.4

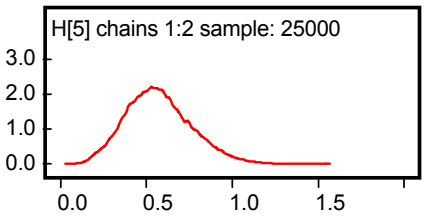

C[38] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
3.8
4.0
4.2
4.4

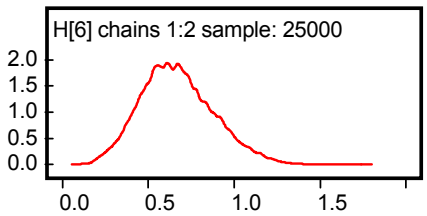

H[1] chains 1:2 sample: 25000
8.0
6.0
4.0
2.0
0.0
0.0
0.2
0.4
0.6

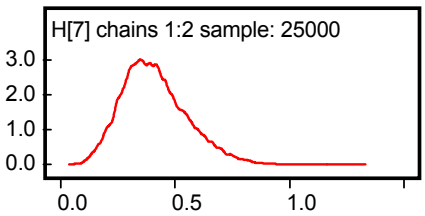

H[2] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
0.0
0.5
1.0
1.5

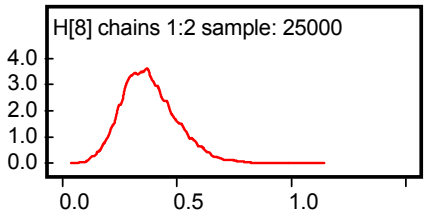

H[3] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
0.0
0.5
1.0
1.5

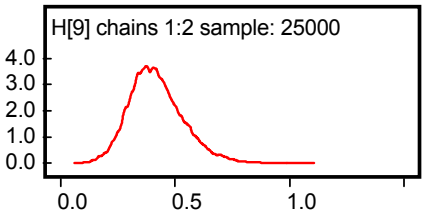

H[4] chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
0.0
0.5
1.0
1.5

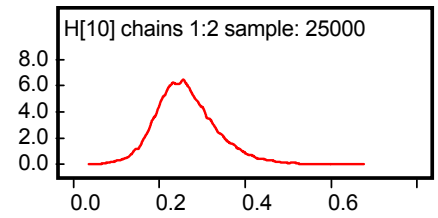

H[5] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
0.0
0.5
1.0
1.5

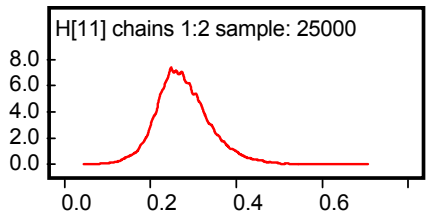

H[6] chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
0.0
0.5
1.0
1.5

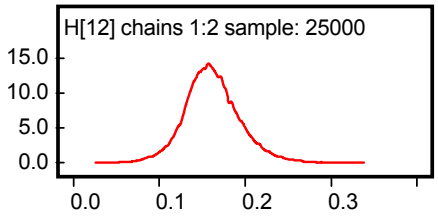

H[7] chains 1:2 sample: 25000
3.0
2.0
1.0
0.0
0.0
0.5
1.0

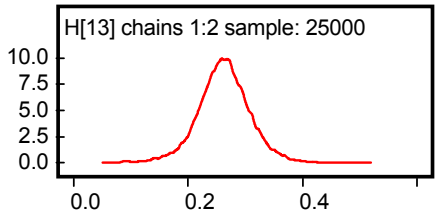

H[8] chains 1:2 sample: 25000
4.0
3.0
2.0
1.0
0.0
0.0
0.5
1.0

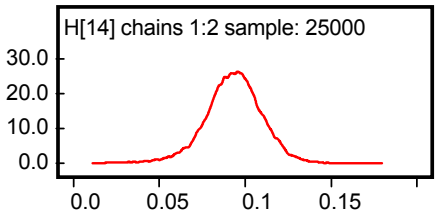

H[9] chains 1:2 sample: 25000
4.0
3.0
2.0
1.0
0.0
0.0
0.5
1.0

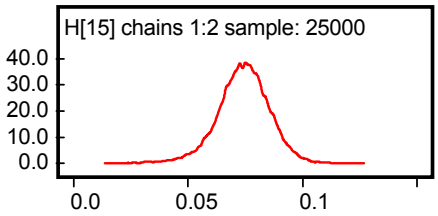

H[10] chains 1:2 sample: 25000
8.0
6.0
4.0
2.0
0.0
0.0
0.2
0.4
0.6

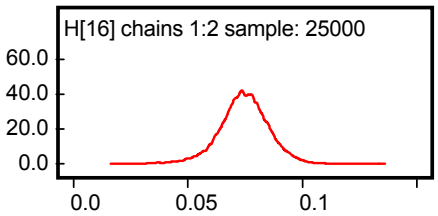

H[11] chains 1:2 sample: 25000
8.0
6.0
4.0
2.0
0.0
0.0
0.2
0.4
0.6

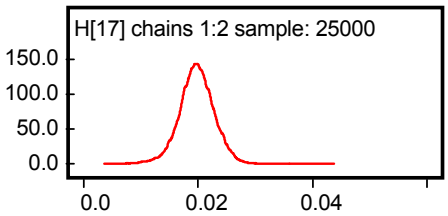

H[12] chains 1:2 sample: 25000
15.0
10.0
5.0
0.0
0.0
0.1
0.2
0.3

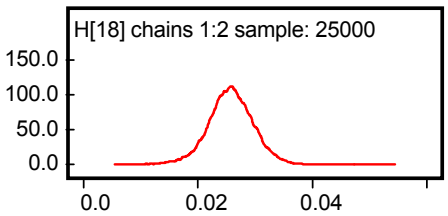

H[13] chains 1:2 sample: 25000
10.0
7.5
5.0
2.5
0.0
0.0
0.2
0.4

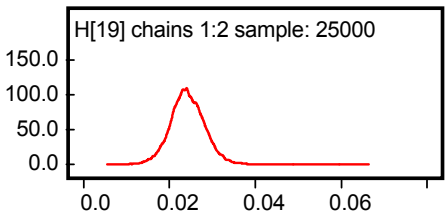

H[14] chains 1:2 sample: 25000
30.0
20.0
10.0
0.0
0.0
0.05
0.1
0.15

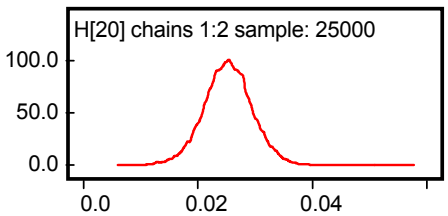

H[15] chains 1:2 sample: 25000
40.0
30.0
20.0
10.0
0.0
0.0
0.05
0.1

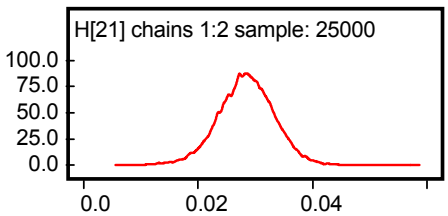

H[16] chains 1:2 sample: 25000
60.0
40.0
20.0
0.0
0.0
0.05
0.1

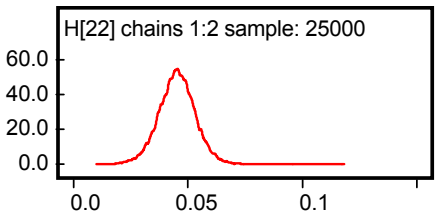

H[17] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.02
0.04

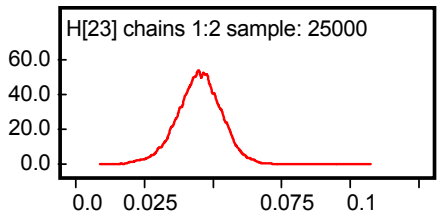

H[18] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.02
0.04

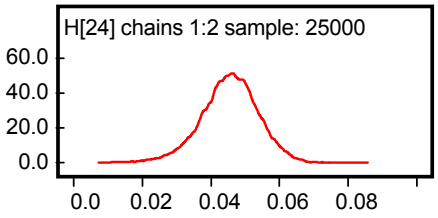

H[19] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.02
0.04
0.06

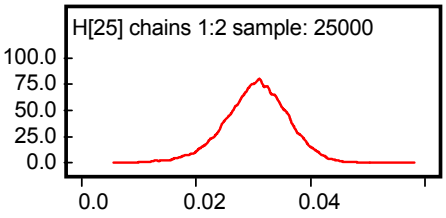

H[20] chains 1:2 sample: 25000
100.0
50.0
0.0
0.0
0.02
0.04

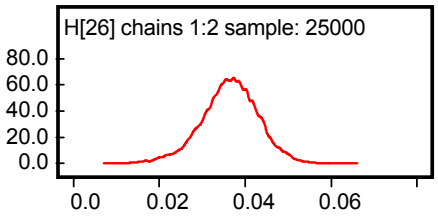

H[21] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04

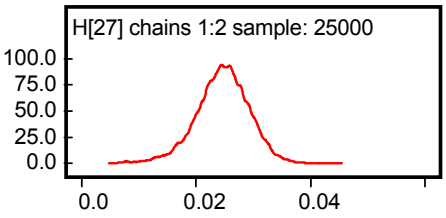

H[22] chains 1:2 sample: 25000
60.0
40.0
20.0
0.0
0.0
0.05
0.1

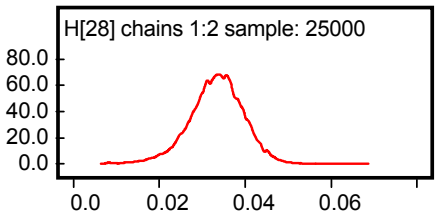

H[23] chains 1:2 sample: 25000
60.0
40.0
20.0
0.0
0.0
0.025
0.075
0.1

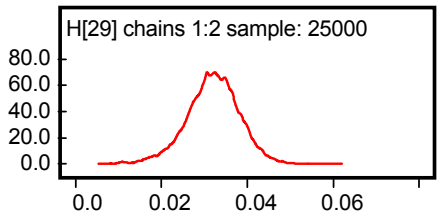

H[24] chains 1:2 sample: 25000
60.0
40.0
20.0
0.0
0.0
0.02
0.04
0.06
0.08

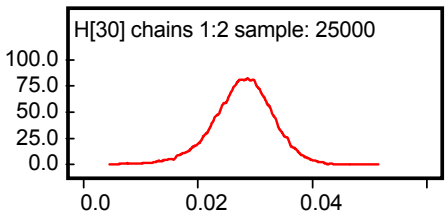

H[25] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04

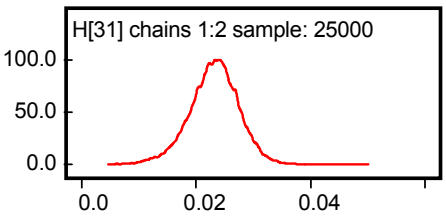

H[26] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.02
0.04
0.06

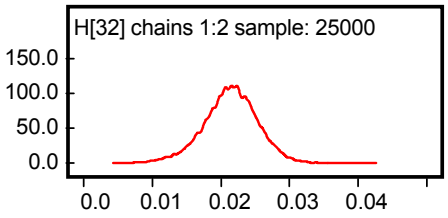

H[27] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04

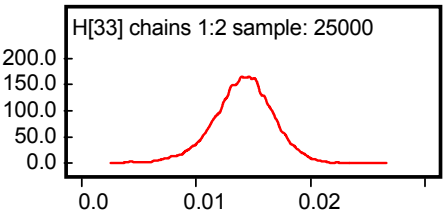

H[28] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.02
0.04
0.06

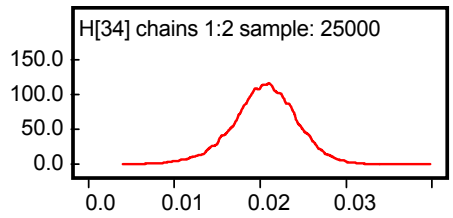

H[29] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.02
0.04
0.06

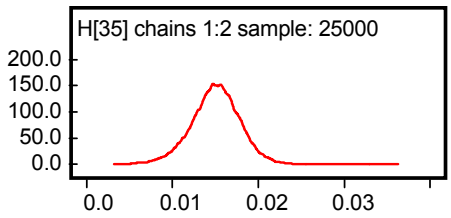

H[30] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04

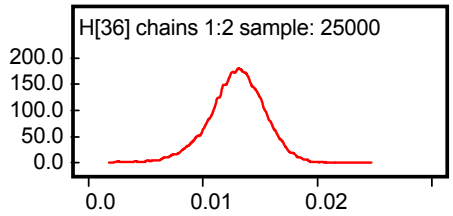

H[31] chains 1:2 sample: 25000
100.0
50.0
0.0
0.0
0.02
0.04

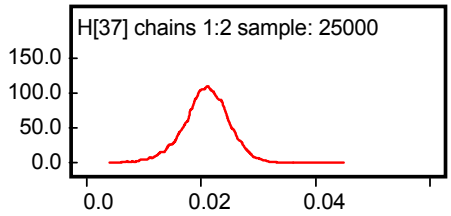

H[32] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03
0.04

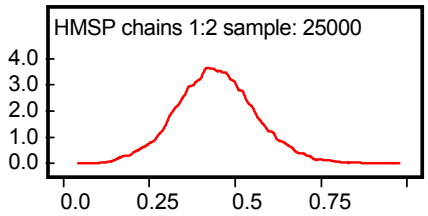

H[33] chains 1:2 sample: 25000
200.0
150.0
100.0
50.0
0.0
0.0
0.01
0.02

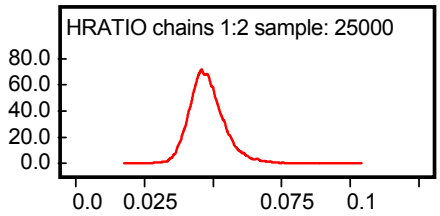

H[34] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03

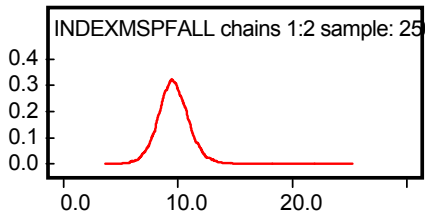

H[35] chains 1:2 sample: 25000
200.0
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03

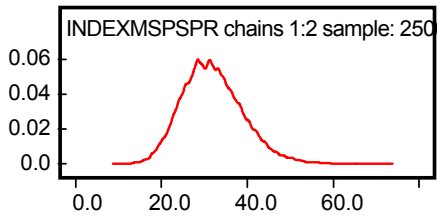

H[36] chains 1:2 sample: 25000
200.0
150.0
100.0
50.0
0.0
0.0
0.01
0.02

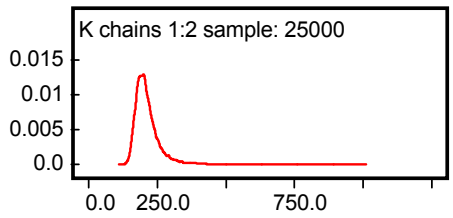

H[37] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.02
0.04

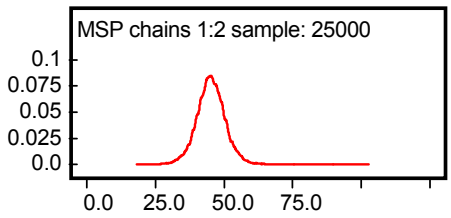

HMSP chains 1:2 sample: 25000
4.0
3.0
2.0
1.0
0.0
0.0
0.25
0.5
0.75

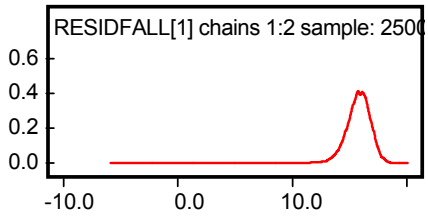

HRATIO chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.025
0.075
0.1

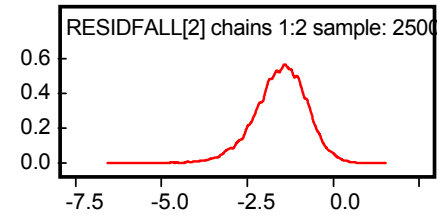

INDEXMSPFALL chains 1:2 sample: 25
0.4
0.3
0.2
0.1
0.0
0.0
10.0
20.0

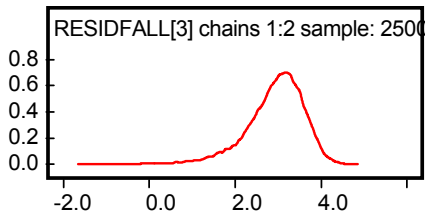

INDEXMSPSPR chains 1:2 sample: 250
0.06
0.04
0.02
0.0
0.0
20.0
40.0
60.0

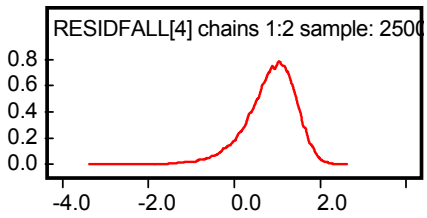

K chains 1:2 sample: 25000
0.015
0.01
0.005
0.0
0.0
250.0
750.0

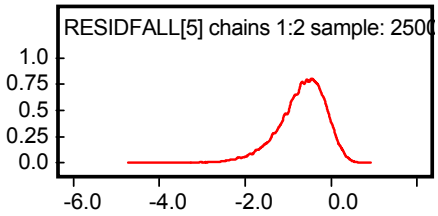

MSP chains 1:2 sample: 25000
0.1
0.075
0.05
0.025
0.0
0.0
25.0
50.0
75.0

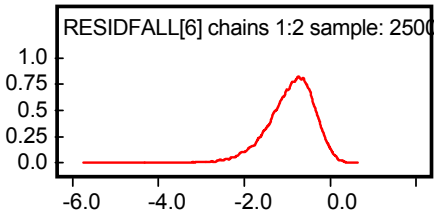

RESIDFALL[1] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
0.0
10.0

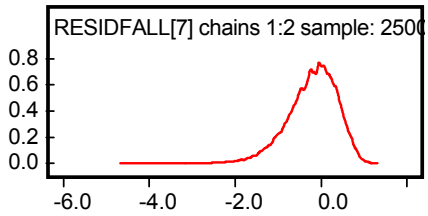

RESIDFALL[2] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-7.5
-5.0
-2.5
0.0

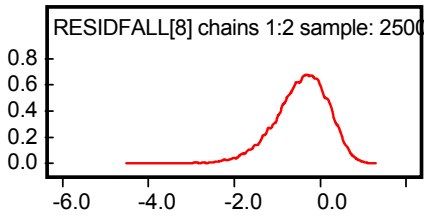

RESIDFALL[3] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-2.0
0.0
2.0
4.0

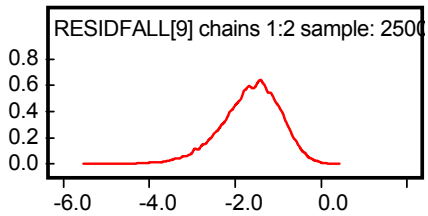

RESIDFALL[4] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-4.0
-2.0
0.0
2.0

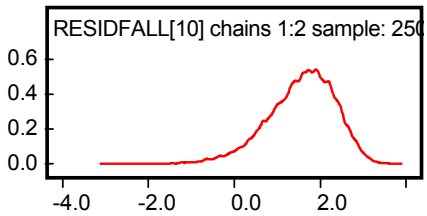

RESIDFALL[5] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-6.0
-4.0
-2.0
0.0

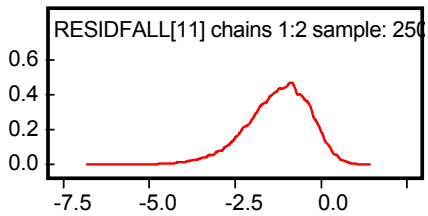

RESIDFALL[6] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-6.0
-4.0
-2.0
0.0

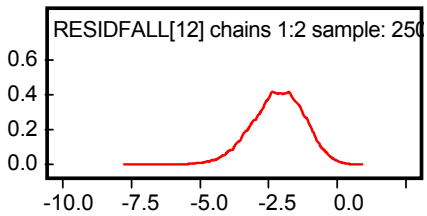

RESIDFALL[7] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-6.0
-4.0
-2.0
0.0

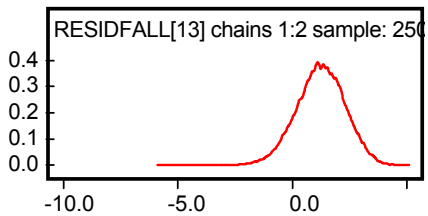

RESIDFALL[8] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-6.0
-4.0
-2.0
0.0

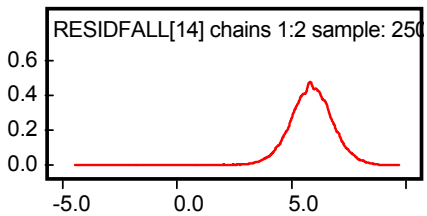

RESIDFALL[9] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-6.0
-4.0
-2.0
0.0

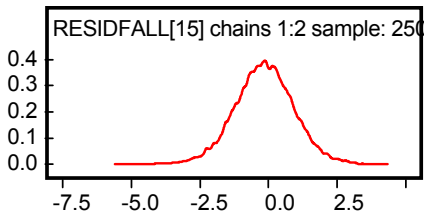

RESIDFALL[10] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-4.0
-2.0
0.0
2.0

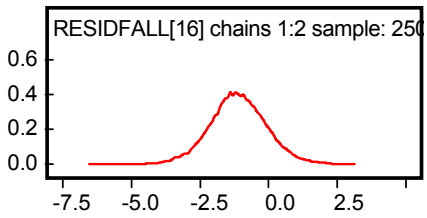

RESIDFALL[11] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-7.5
-5.0
-2.5
0.0

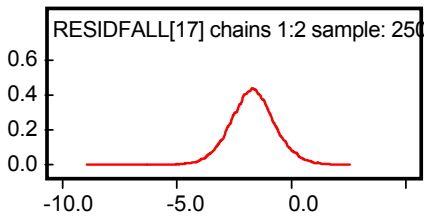

RESIDFALL[12] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
-7.5
-5.0
-2.5
0.0

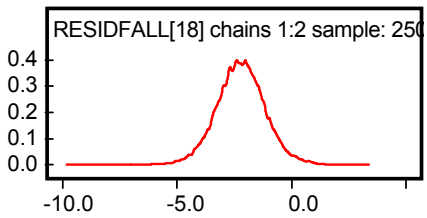

RESIDFALL[13] chains 1:2 sample: 250
0.4
0.3
0.2
0.1
0.0
-10.0
-5.0
0.0

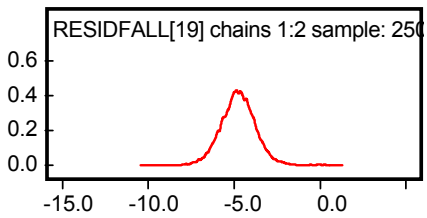

RESIDFALL[14] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-5.0
0.0
5.0

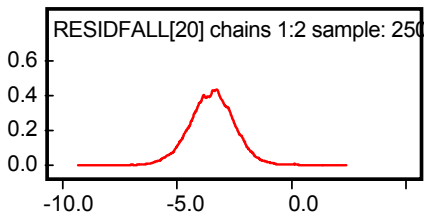

RESIDFALL[15] chains 1:2 sample: 250
0.4
0.3
0.2
0.1
0.0
-7.5
-5.0
-2.5
0.0
2.5

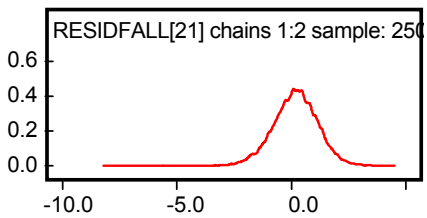

RESIDFALL[16] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-7.5
-5.0
-2.5
0.0
2.5

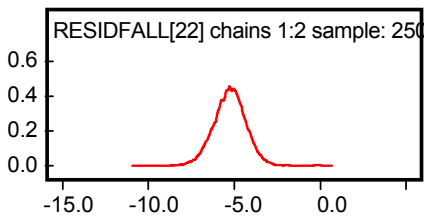

RESIDFALL[17] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
-5.0
0.0

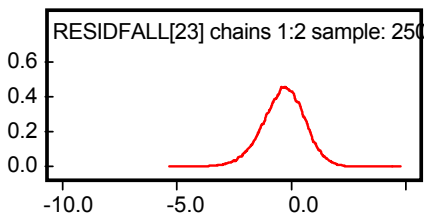

RESIDFALL[18] chains 1:2 sample: 250
0.4
0.3
0.2
0.1
0.0
-10.0
-5.0
0.0

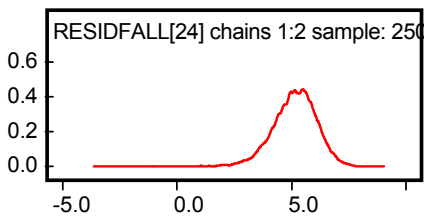

RESIDFALL[19] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-15.0
-10.0
-5.0
0.0

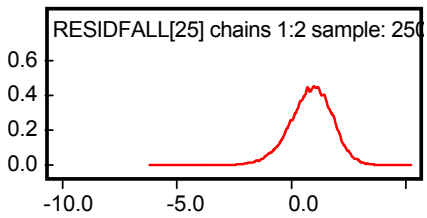

RESIDFALL[20] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
-5.0
0.0

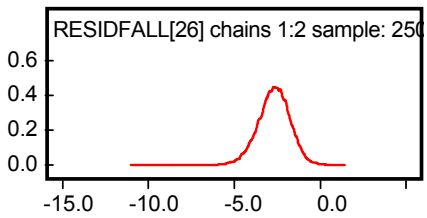

RESIDFALL[21] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
-5.0
0.0

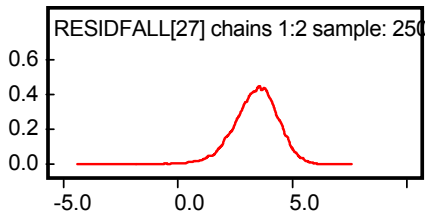

RESIDFALL[22] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-15.0
-10.0
-5.0
0.0

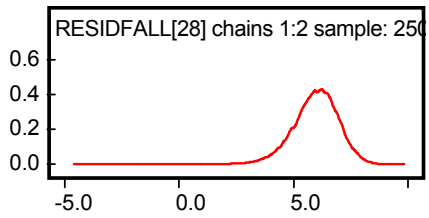

RESIDFALL[23] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
-5.0
0.0

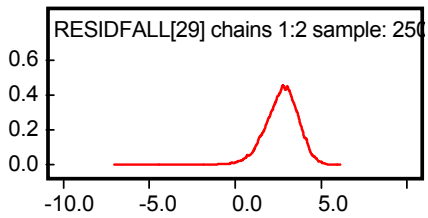

RESIDFALL[24] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-5.0
0.0
5.0

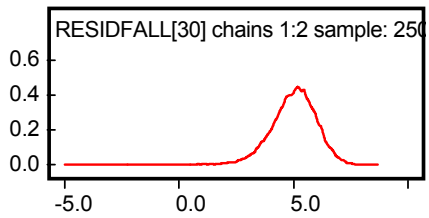

RESIDFALL[25] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
-5.0
0.0

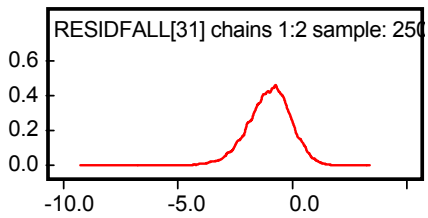

RESIDFALL[26] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-15.0
-10.0
-5.0
0.0

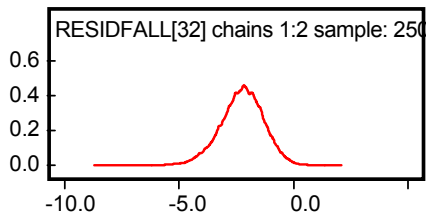

RESIDFALL[27] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-5.0
0.0
5.0

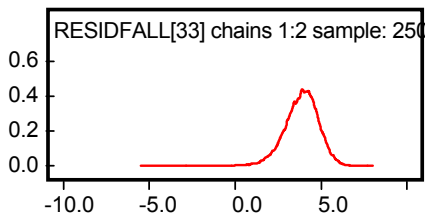

RESIDFALL[28] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-5.0
0.0
5.0

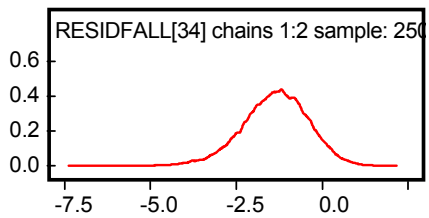

RESIDFALL[29] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
-5.0
0.0
5.0

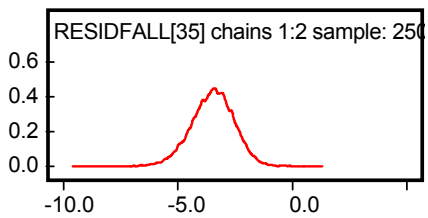

RESIDFALL[30] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-5.0
0.0
5.0

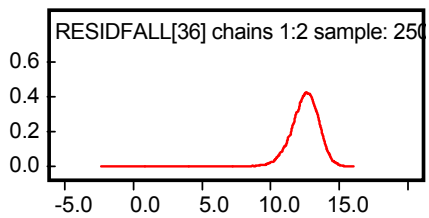

RESIDFALL[31] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
-5.0
0.0

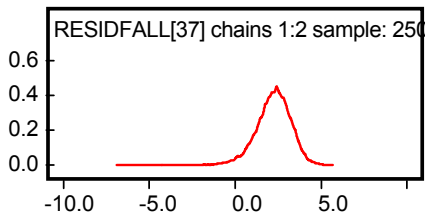

RESIDFALL[32] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
-5.0
0.0

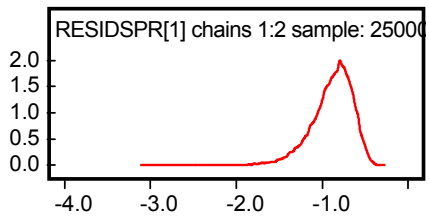

RESIDFALL[33] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
-5.0
0.0
5.0

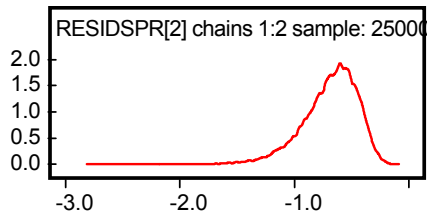

RESIDFALL[34] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-7.5
-5.0
-2.5
0.0

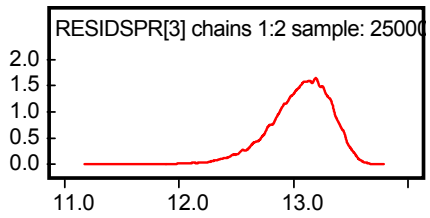

RESIDFALL[35] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
-5.0
0.0

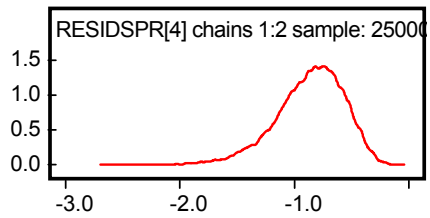

RESIDFALL[36] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-5.0
0.0
5.0
10.0
15.0

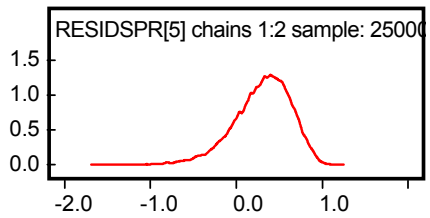

RESIDFALL[37] chains 1:2 sample: 250
0.6
0.4
0.2
0.0
-10.0
-5.0
0.0
5.0

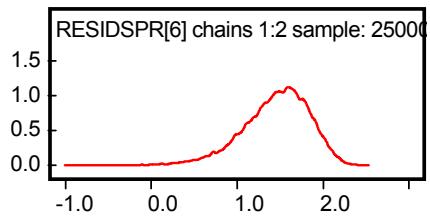

RESIDSPR[1] chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0

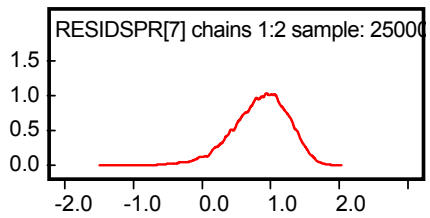

RESIDSPR[2] chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0

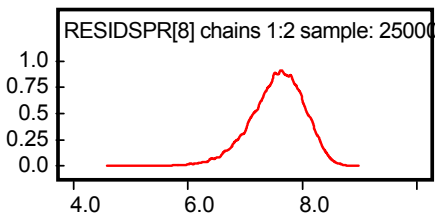

RESIDSPR[3] chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
11.0
12.0
13.0

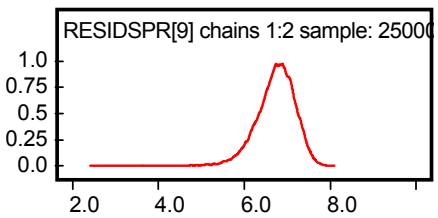

RESIDSPR[4] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0

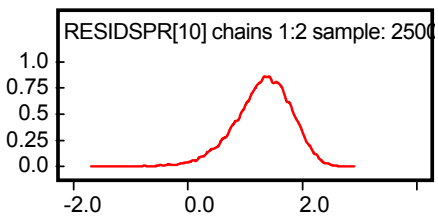

RESIDSPR[5] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0

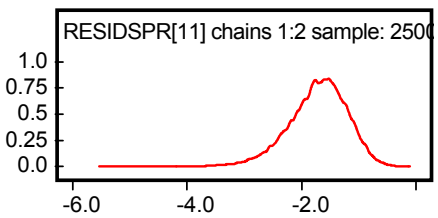

RESIDSPR[6] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
-1.0
0.0
1.0
2.0

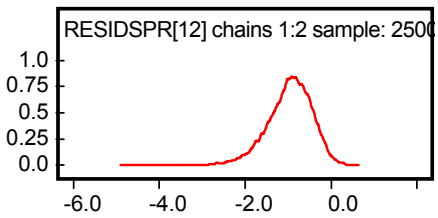

RESIDSPR[7] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0
2.0

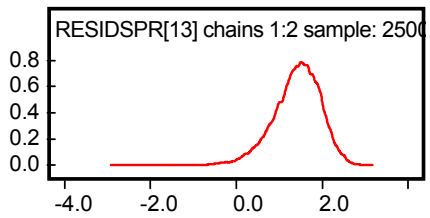

RESIDSPR[8] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
4.0
6.0
8.0

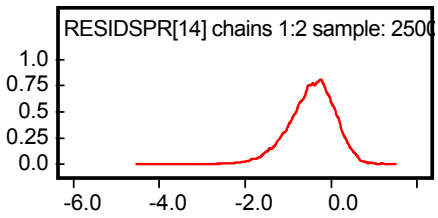

RESIDSPR[9] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
2.0
4.0
6.0
8.0

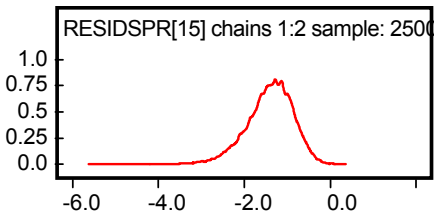

RESIDSPR[10] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-2.0
0.0
2.0

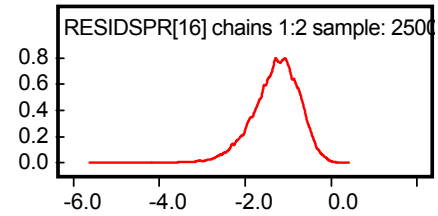

RESIDSPR[11] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-6.0
-4.0
-2.0

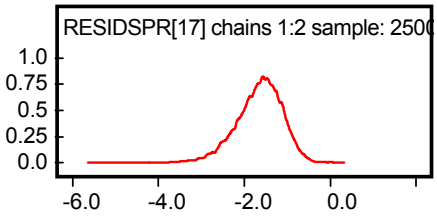

RESIDSPR[12] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-6.0
-4.0
-2.0
0.0

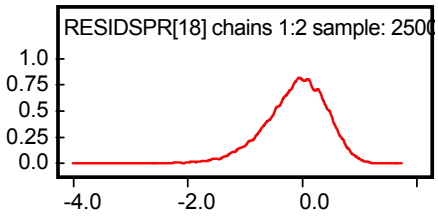

RESIDSPR[13] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-4.0
-2.0
0.0
2.0

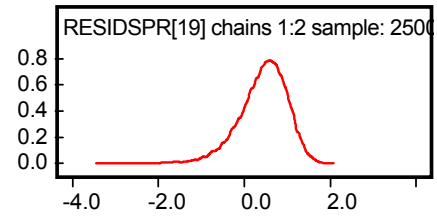

RESIDSPR[14] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-6.0
-4.0
-2.0
0.0

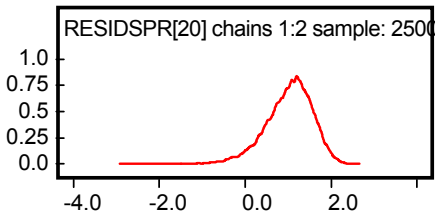

RESIDSPR[15] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-6.0
-4.0
-2.0
0.0

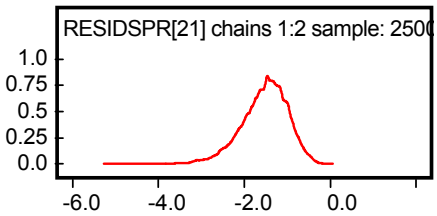

RESIDSPR[16] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-6.0
-4.0
-2.0
0.0

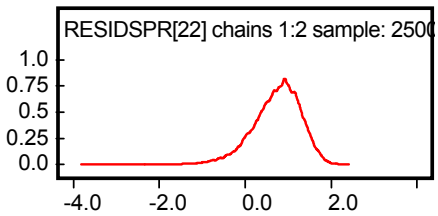

RESIDSPR[17] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-6.0
-4.0
-2.0
0.0

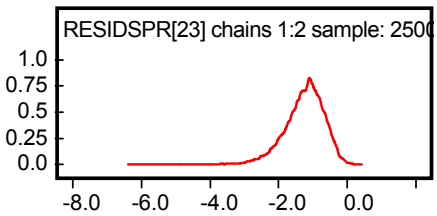

RESIDSPR[18] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

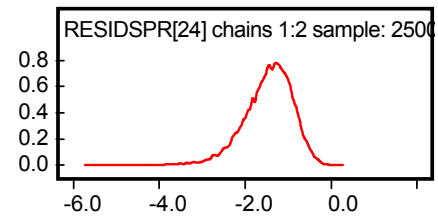

RESIDSPR[19] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-4.0
-2.0
0.0
2.0

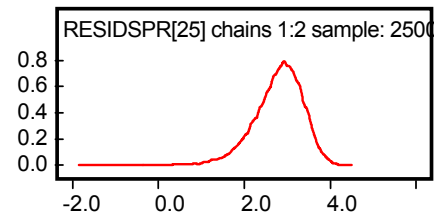

RESIDSPR[20] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0
2.0

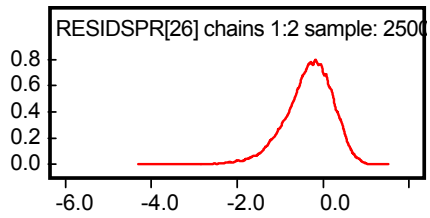

RESIDSPR[21] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-6.0
-4.0
-2.0
0.0

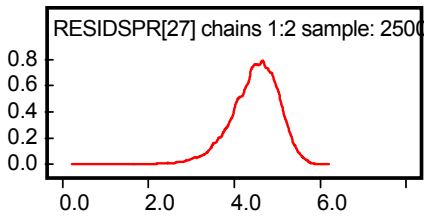

RESIDSPR[22] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0
2.0

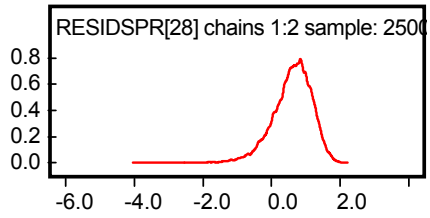

RESIDSPR[23] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-8.0
-6.0
-4.0
-2.0
0.0

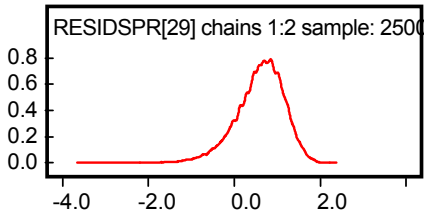

RESIDSPR[24] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-6.0
-4.0
-2.0
0.0

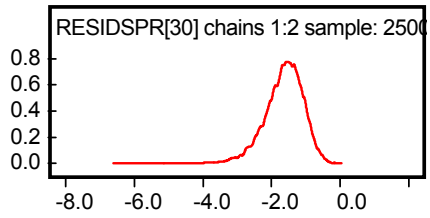

RESIDSPR[25] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-2.0
0.0
2.0
4.0

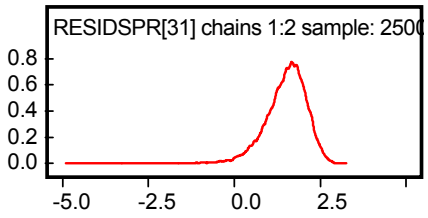

RESIDSPR[26] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-6.0
-4.0
-2.0
0.0

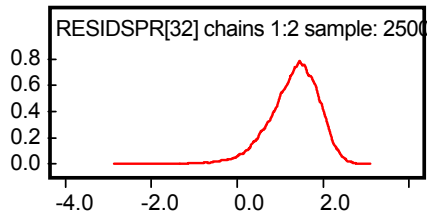

RESIDSPR[27] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
0.0
2.0
4.0
6.0

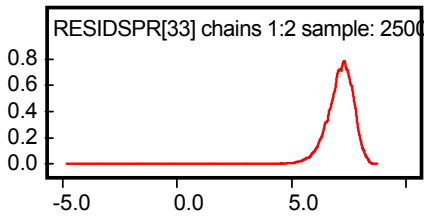

RESIDSPR[28] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-6.0
-4.0
-2.0
0.0
2.0

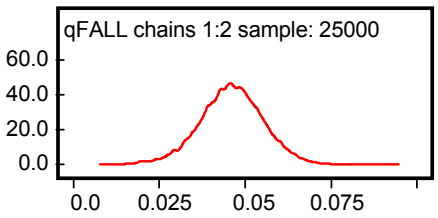

RESIDSPR[29] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-4.0
-2.0
0.0
2.0

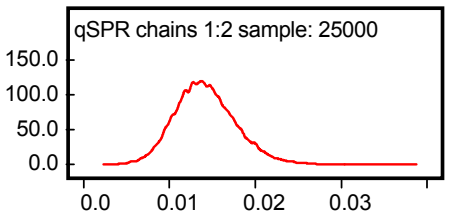

RESIDSPR[30] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-8.0
-6.0
-4.0
-2.0
0.0

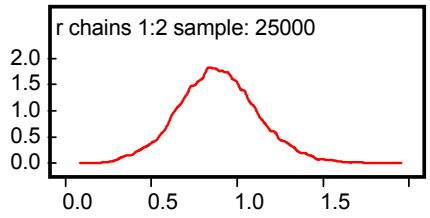

RESIDSPR[31] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-5.0
-2.5
0.0
2.5

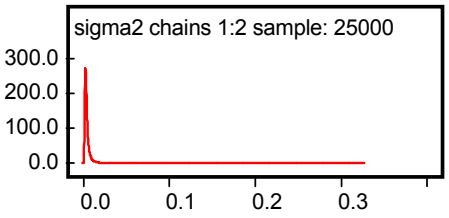

RESIDSPR[32] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-4.0
-2.0
0.0
2.0

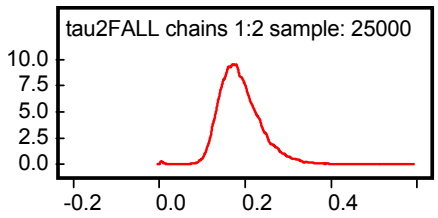

RESIDSPR[33] chains 1:2 sample: 2500
0.8
0.6
0.4
0.2
0.0
-5.0
0.0
5.0

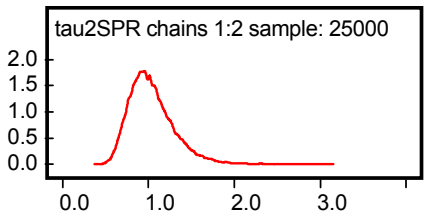

qFALL chains 1:2 sample: 25000
60.0
40.0
20.0
0.0
0.0
0.025
0.05
0.075


qSPR chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03


r chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
0.0
0.5
1.0
1.5


sigma2 chains 1:2 sample: 25000
300.0
200.0
100.0
0.0
0.0
0.1
0.2
0.3


tau2FALL chains 1:2 sample: 25000
10.0
7.5
5.0
2.5
0.0
-0.2
0.0
0.2
0.4


tau2SPR chains 1:2 sample: 25000
2.0
1.5
1.0
0.5
0.0
0.0
1.0
2.0
3.0

Appendix 1. Southern stock area BSP model for silver hake.

```
# Implementation of the surplus production model for southern whiting
# Jon Brodziak, NEFSC Nov-7-00
# LOGNORMAL OBSERVATION ERRORS
#########################################################################

model South_FS_6300

{
# PRIOR DISTRIBUTIONS
#####################################

# PRIOR FOR K
# Lognormal with 10%Q at 400 kt and 90%Q at 2000 kt
#############################################

K ~ dlnorm(6.79618,2.53004)I(10,5000)

# PRIOR FOR R
# Uniform from [0.01,1.99]
#############################################

r ~ dunif(0.01,1.99)

# PRIOR FOR Q
# Inverse gamma with a=b=0.001
# and bounded as (0.001,10)
##############################

iqFALL ~ dgamma(0.001,0.001)I(0.1,1000);
qFALL <- 1/iqFALL;
iqSPR ~ dgamma(0.001,0.001)I(0.1,1000);
qSPR <- 1/iqSPR;

# PRIOR FOR SIGMA2 - PROCESS ERROR VARIANCE
#########################################################

isigma2 ~ dgamma(a0,b0);
sigma2 <- 1/isigma2;

# PRIOR FOR TAU2FALL/SPR - OBSERVATION ERROR VARIANCE
#########################################################

itau2FALL   ~ dgamma(c0FALL,d0FALL);
tau2FALL   <- 1/itau2FALL;
itau2SPR   ~ dgamma(c0SPR,d0SPR);
tau2SPR   <- 1/itau2SPR;

# CONDITIONAL PRIORS FOR PROPORTIONS P
# Lognormal bounded as (0.001,3)
#####################################

Pmean[1] <- 0;
P[1] ~ dlnorm(Pmean[1],isigma2) I(0.001,3)
dlow[1] <- dlowpre*L[1]
dup[1] <- duppre*L[1]
# Low precision catch error during 1963
C[1] ~ dunif(dlow[1],dup[1])

# Low precision catch error during 1964-1977
for (i in 2:15) {
   Pmean[i] <- log(max(P[i-1] + r*P[i-1]*(1-P[i-1]) - C[i-1]/K,0.001))
```

```
    P[i]  ~ dlnorm(Pmean[i],isigma2)I(0.001,3)
    dlow[i] <- dlowpre*L[i]
    dup[i] <- duppre*L[i]
    C[i] ~ dunif(dlow[i],dup[i])
    }
# High precision catch error during 1978-2000
for (i in 16:38) {
    Pmean[i] <- log(max(P[i-1] + r*P[i-1]*(1-P[i-1]) - C[i-1]/K,0.001))
    P[i]      ~ dlnorm(Pmean[i],isigma2)I(0.001,3)
    dlow[i] <- dlowcur*L[i]
    dup[i] <- dupcur*L[i]
    C[i] ~ dunif(dlow[i],dup[i])
    }


# LIKELIHOOD OF SAMPLING DISTRIBUTION
#####################################
# FALL SURVEY LIKELIHOOD & RESIDUALS
for (i in 1:N) {
     lmeanFALL[i] <- log(qFALL*K*P[i])
     lFALL[i] ~ dlnorm(lmeanFALL[i],itau2FALL)
     RESIDFALL[i] <- lFALL[i] - qFALL*K*P[i]
     }
# SPRING SURVEY LIKELIHOOD & RESIDUALS
for (i in 1:NSPR) {
     lmeanSPR[i] <- log(qSPR*K*P[i+5])
     lSPR[i] ~ dlnorm(lmeanSPR[i],itau2SPR)
     RESIDSPR[i] <- lSPR[i] - qSPR*K*P[i]
    }
# MANAGEMENT PARAMETERS
MSP <- r*K/4
INDEXMSPFALL <- r/(2*qFALL)
INDEXMSPSPR <- r/(2*qSPR)
HMSP <- r/2
HRATIO <- H[37]/HMSP

#  COMPUTE BIOMASS AND HARVEST RATE TRAJECTORIES
for (i in 1:N) {
     B[i] <- P[i]*K
     H[i] <- C[i]/B[i]
    }

# PROJECT YEAR 2001
P2001 <- P[N+1]+r*P[N+1]*(1-P[N+1])-C[N+1]/K
B2001 <- P2001*K
H2000 <- min(C[N+1]/(P[N+1]*K),1.0)

# END OF CODE
}
```

Data

```
# Vector L() is discard-adjusted total catch
# Vector IFALL() is autumn kg/tow index
# Vector ISPR is spring kg/tow index
# N is number of years
# Sigma is state equation error with parameters a0,b0
# TauFALL is autumn observation equation error with parameters c0FALL,d0FALL
# TauSPR is autumn observation equation error with parameters c0SPR,d0SPR
# Vector C() is discard-adjusted catch with error multiplier
# Error multiplier is bounded by [dlowpre,duppre] for 1963-1976
# and is bounded by [dlowcur,dupcur] for 1976-2000
```

```
list(
L=c(93.382,153.584,307.131,211.270,91.249,58.496,75.561,27.512,71.890,
94.396,104.593,109.863,74.253,68.741,59.308,27.132,18.375,13.546,14.826,
14.561,12.140,13.143,13.164,10.123,10.121,9.194,13.169,13.615,10.093,
10.288,12.912,12.004,12.021,12.280,12.757,12.433,10.059,11.000),
lFALL=c(3.418,2.908,3.773,1.760,2.186,2.693,1.256,1.332,2.210,2.000,
1.699,0.862,1.840,2.062,1.773,2.931,1.741,2.122,1.166,1.651,3.200,1.558,
3.907,1.388,1.619,1.830,2.120,1.645,0.907,0.978,1.329,0.799,1.641,0.431,
0.842,0.62,0.87),
lSPR=c(3.756,2.202,1.233,2.192,1.399,4.968,3.474,6.486,4.11,4.553,5.307,
2.342,2.779,3.761,2.018,1.376,2.209,2.642,2.672,3.617,1.709,2.316,3.869,
1.459,0.528,1.362,2.278,0.999,6.216,0.684,0.686,1.774,1.049),
N=37,
NSPR=33,
a0=4.0,b0=0.01,
c0FALL=2.0,d0FALL=0.01,
c0SPR=2.0,d0SPR=0.01,
dlowpre=0.90,duppre=1.10,
dlowcur=1.00,dupcur=1.10)
```

Inits

```
# Initial Condition 1
list(
P=c(0.9,0.7,0.7,0.5,0.6,0.7,0.3,0.3,0.6,0.5,0.4,0.2,0.5,0.5,0.5,0.8,0.4,
0.5,0.3,0.4,0.8,0.4,1.0,0.4,0.4,0.5,0.5,0.4,0.2,0.3,0.3,0.2,0.4,0.1,0.2,
0.2,0.2,0.2),
C=c(93.382,153.584,307.131,211.270,91.249,58.496,75.561,27.512,71.890,
94.396,104.593,109.863,74.253,68.741,59.308,27.132,18.375,13.546,14.826,
14.561,12.140,13.143,13.164,10.123,10.121,9.194,13.169,13.615,10.093,
10.288,12.912,12.004,12.021,12.280,12.757,12.433,10.059,11.000),
r=0.4,
K=600,
iqFALL=10,iqSPR=20,
isigma2=100,
itau2FALL=100,itau2SPR=100)

# Initial Condition 2
list(
P=c(0.9,0.7,0.7,0.5,0.6,0.7,0.3,0.3,0.6,0.5,0.4,0.2,0.5,0.5,0.5,0.8,0.4,
0.5,0.3,0.4,0.8,0.4,1.0,0.4,0.4,0.5,0.5,0.4,0.2,0.3,0.3,0.2,0.4,0.1,0.2,
0.2,0.2,0.2),
C=c(93.382,153.584,307.131,211.270,91.249,58.496,75.561,27.512,71.890,
94.396,104.593,109.863,74.253,68.741,59.308,27.132,18.375,13.546,14.826,
14.561,12.140,13.143,13.164,10.123,10.121,9.194,13.169,13.615,10.093,
10.288,12.912,12.004,12.021,12.280,12.757,12.433,10.059,11.000),
r=0.3,
K=600,
iqFALL=10,iqSPR=20,
isigma2=100,
itau2FALL=100,itau2SPR=100)
```

Results

Summary of Posterior Distribution

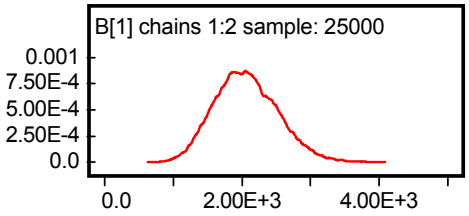
node	mean	sd	MC error	10.0%	25.0%	median	75.0%	90.0%	start	sample
B[1]	2068.0	459.6	10.02	1494.0	1744.0	2043.0	2371.0	2670.0	5000	25000
B[2]	2004.0	444.1	9.509	1452.0	1687.0	1980.0	2298.0	2593.0	5000	25000
B[3]	1886.0	423.1	9.263	1360.0	1577.0	1856.0	2169.0	2453.0	5000	25000
B[4]	1563.0	395.3	9.11	1069.0	1278.0	1538.0	1832.0	2092.0	5000	25000
B[5]	1385.0	376.6	9.026	917.1	1108.0	1358.0	1643.0	1890.0	5000	25000
B[6]	1320.0	358.9	8.929	872.4	1053.0	1292.0	1566.0	1805.0	5000	25000
B[7]	1233.0	341.3	8.728	803.4	983.8	1209.0	1470.0	1696.0	5000	25000
B[8]	1184.0	332.5	8.65	767.7	939.9	1162.0	1412.0	1637.0	5000	25000
B[9]	1250.0	329.2	8.616	834.4	1008.0	1227.0	1476.0	1699.0	5000	25000
B[10]	1254.0	326.1	8.559	846.0	1014.0	1232.0	1480.0	1697.0	5000	25000
B[11]	1252.0	326.6	8.614	842.3	1013.0	1231.0	1472.0	1698.0	5000	25000
B[12]	1217.0	325.6	8.643	810.4	977.3	1193.0	1440.0	1655.0	5000	25000
B[13]	1246.0	336.6	9.027	828.2	997.4	1219.0	1477.0	1706.0	5000	25000
B[14]	1270.0	344.4	9.302	844.1	1015.0	1245.0	1503.0	1739.0	5000	25000
B[15]	1275.0	350.1	9.389	841.5	1016.0	1245.0	1511.0	1750.0	5000	25000
B[16]	1279.0	354.2	9.446	844.6	1016.0	1247.0	1512.0	1759.0	5000	25000
B[17]	1229.0	339.8	9.07	807.3	977.8	1202.0	1457.0	1691.0	5000	25000
B[18]	1209.0	331.6	8.958	797.0	964.5	1182.0	1436.0	1656.0	5000	25000
B[19]	1177.0	323.0	8.719	776.2	939.3	1150.0	1397.0	1616.0	5000	25000
B[20]	1176.0	319.9	8.655	779.0	941.4	1150.0	1393.0	1609.0	5000	25000
B[21]	1200.0	324.3	8.658	800.7	962.4	1174.0	1415.0	1636.0	5000	25000
B[22]	1191.0	320.0	8.484	795.7	955.6	1165.0	1405.0	1625.0	5000	25000
B[23]	1210.0	324.9	8.564	812.5	973.7	1182.0	1421.0	1647.0	5000	25000
B[24]	1138.0	304.5	8.1	761.5	914.5	1113.0	1339.0	1548.0	5000	25000
B[25]	1099.0	293.7	7.802	736.4	882.2	1075.0	1297.0	1495.0	5000	25000
B[26]	1050.0	280.6	7.406	703.5	843.5	1027.0	1238.0	1431.0	5000	25000
B[27]	1004.0	267.6	7.113	673.3	807.8	982.0	1184.0	1369.0	5000	25000
B[28]	923.7	247.0	6.571	617.5	740.8	903.9	1091.0	1257.0	5000	25000
B[29]	813.9	224.2	6.006	532.5	649.0	798.8	966.5	1117.0	5000	25000
B[30]	748.4	208.7	5.581	485.6	594.9	734.0	890.8	1033.0	5000	25000
B[31]	727.5	200.1	5.369	477.4	579.3	712.7	864.1	999.6	5000	25000
B[32]	693.6	192.2	5.165	453.2	552.3	678.8	823.1	956.1	5000	25000
B[33]	668.7	185.7	5.025	437.7	532.0	654.3	793.9	921.4	5000	25000
B[34]	622.1	179.1	4.867	400.4	489.0	608.7	741.3	864.8	5000	25000
B[35]	587.2	173.4	4.668	374.4	457.9	572.2	701.4	823.6	5000	25000
B[36]	568.4	172.7	4.633	357.5	441.2	551.6	680.4	803.4	5000	25000
B[37]	578.5	176.9	4.663	362.5	447.2	561.1	693.4	820.1	5000	25000
C[1]	93.36	5.394	0.03647	85.93	88.68	93.33	98.06	100.9	5000	25000
C[2]	153.4	8.847	0.05794	141.3	145.8	153.3	161.1	165.8	5000	25000
C[3]	307.1	17.76	0.1034	282.5	291.7	307.2	322.5	331.8	5000	25000
C[4]	211.1	12.2	0.07261	194.2	200.5	211.1	221.5	228.0	5000	25000
C[5]	91.24	5.29	0.03406	83.88	86.7	91.23	95.84	98.53	5000	25000
C[6]	58.51	3.377	0.02272	53.83	55.59	58.54	61.45	63.17	5000	25000
C[7]	75.53	4.361	0.02817	69.48	71.75	75.52	79.3	81.57	5000	25000
C[8]	27.48	1.585	0.009923	25.3	26.1	27.45	28.85	29.69	5000	25000
C[9]	71.78	4.15	0.02536	66.07	68.17	71.7	75.38	77.57	5000	25000
C[10]	94.22	5.471	0.03682	86.71	89.47	94.05	98.94	101.9	5000	25000
C[11]	104.4	5.998	0.03785	96.2	99.24	104.3	109.5	112.8	5000	25000
C[12]	109.4	6.358	0.03987	100.8	103.9	109.2	114.9	118.4	5000	25000
C[13]	74.11	4.265	0.02603	68.23	70.41	74.08	77.77	80.09	5000	25000
C[14]	68.65	3.97	0.02397	63.21	65.17	68.6	72.08	74.17	5000	25000
C[15]	59.26	3.422	0.02072	54.53	56.29	59.24	62.23	64.0	5000	25000
C[16]	28.49	0.7837	0.004844	27.4	27.8	28.49	29.17	29.57	5000	25000
C[17]	19.3	0.5288	0.003239	18.56	18.84	19.29	19.76	20.03	5000	25000
C[18]	14.22	0.393	0.002382	13.68	13.88	14.22	14.57	14.77	5000	25000
C[19]	15.57	0.4289	0.002644	14.97	15.2	15.57	15.95	16.16	5000	25000
C[20]	15.29	0.4193	0.002728	14.71	14.93	15.29	15.65	15.87	5000	25000
C[21]	12.75	0.3502	0.002097	12.26	12.44	12.75	13.05	13.23	5000	25000
C[22]	13.8	0.3796	0.002468	13.27	13.47	13.8	14.13	14.33	5000	25000
C[23]	13.82	0.3787	0.002392	13.3	13.49	13.82	14.15	14.35	5000	25000
C[24]	10.63	0.2922	0.001826	10.22	10.37	10.63	10.88	11.03	5000	25000
C[25]	10.63	0.2928	0.001914	10.22	10.37	10.63	10.88	11.03	5000	25000

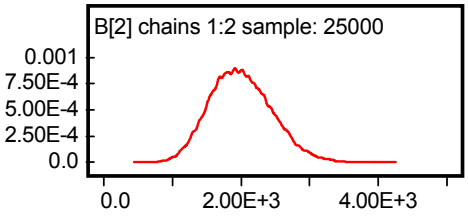
C[26]	9.654	0.2657	0.00172	9.286	9.425	9.655	9.884	10.02	5000	25000
C[27]	13.83	0.3802	0.002399	13.3	13.5	13.84	14.16	14.36	5000	25000
C[28]	14.3	0.3913	0.002172	13.75	13.96	14.3	14.63	14.84	5000	25000
C[29]	10.6	0.292	0.001977	10.19	10.35	10.6	10.85	11.0	5000	25000
C[30]	10.81	0.2959	0.001859	10.4	10.55	10.81	11.06	11.21	5000	25000
C[31]	13.56	0.3721	0.002125	13.04	13.23	13.56	13.88	14.07	5000	25000
C[32]	12.61	0.345	0.00224	12.13	12.31	12.61	12.9	13.09	5000	25000
C[33]	12.62	0.3458	0.002082	12.14	12.32	12.63	12.92	13.1	5000	25000
C[34]	12.9	0.3533	0.002032	12.4	12.59	12.9	13.2	13.38	5000	25000
C[35]	13.39	0.3678	0.002351	12.88	13.08	13.39	13.71	13.9	5000	25000
C[36]	13.05	0.3582	0.002359	12.56	12.74	13.05	13.36	13.55	5000	25000
C[37]	10.56	0.2915	0.00179	10.16	10.31	10.56	10.81	10.97	5000	25000
C[38]	11.55	0.3168	0.002038	11.11	11.28	11.55	11.83	11.99	5000	25000
H[1]	0.04754	0.01174	2.669E-4	0.03453	0.03924	0.04568	0.05379	0.06296	5000	25000
H[2]	0.0806	0.01985	4.482E-4	0.05861	0.06645	0.0774	0.09111	0.1064	5000	25000
H[3]	0.1716	0.04214	9.728E-4	0.1244	0.141	0.1653	0.1948	0.2265	5000	25000
H[4]	0.1445	0.04121	0.001008	0.1	0.1149	0.1372	0.1657	0.1984	5000	25000
H[5]	0.07138	0.02241	5.635E-4	0.04784	0.05541	0.06719	0.08245	0.09964	5000	25000
H[6]	0.04806	0.01506	3.932E-4	0.03212	0.03723	0.0452	0.05563	0.06724	5000	25000
H[7]	0.06664	0.02153	5.808E-4	0.04419	0.05126	0.06231	0.07703	0.09439	5000	25000
H[8]	0.02535	0.008485	2.308E-4	0.01666	0.01941	0.02362	0.02924	0.03603	5000	25000
H[9]	0.06195	0.01881	5.119E-4	0.04207	0.04853	0.05836	0.07124	0.08621	5000	25000
H[10]	0.08087	0.02412	6.569E-4	0.05507	0.06347	0.07641	0.0932	0.1121	5000	25000
H[11]	0.08974	0.02668	7.298E-4	0.06107	0.07057	0.08481	0.1034	0.1246	5000	25000
H[12]	0.0972	0.02979	8.263E-4	0.06569	0.07577	0.09152	0.112	0.1357	5000	25000
H[13]	0.06434	0.01973	5.498E-4	0.04313	0.05014	0.06083	0.07431	0.0901	5000	25000
H[14]	0.05845	0.01789	5.004E-4	0.03915	0.04554	0.05518	0.06773	0.08169	5000	25000
H[15]	0.05034	0.01543	4.276E-4	0.03359	0.03909	0.0475	0.05846	0.07076	5000	25000
H[16]	0.02416	0.007342	2.063E-4	0.01616	0.01884	0.0228	0.02803	0.03384	5000	25000
H[17]	0.01703	0.005226	1.465E-4	0.01139	0.01324	0.01605	0.01971	0.02395	5000	25000
H[18]	0.01276	0.003915	1.111E-4	0.008575	0.009905	0.01204	0.01474	0.01787	5000	25000
H[19]	0.01435	0.00445	1.266E-4	0.009606	0.01113	0.01353	0.0166	0.02006	5000	25000
H[20]	0.01408	0.004305	1.228E-4	0.009483	0.01098	0.01327	0.01621	0.01971	5000	25000
H[21]	0.01147	0.003424	9.654E-5	0.007763	0.008997	0.01084	0.01325	0.01595	5000	25000
H[22]	0.01252	0.003746	1.051E-4	0.008473	0.009814	0.01184	0.01445	0.0174	5000	25000
H[23]	0.01232	0.003611	1.003E-4	0.008369	0.00971	0.01172	0.0142	0.01703	5000	25000
H[24]	0.01008	0.002977	8.404E-5	0.006851	0.00793	0.009558	0.01162	0.01399	5000	25000
H[25]	0.01043	0.003068	8.706E-5	0.007083	0.008189	0.009898	0.01205	0.01442	5000	25000
H[26]	0.009923	0.002941	8.262E-5	0.006742	0.00779	0.009411	0.01144	0.01374	5000	25000
H[27]	0.01485	0.004349	1.218E-4	0.01009	0.01166	0.01408	0.01717	0.02059	5000	25000
H[28]	0.01671	0.004968	1.39E-4	0.01136	0.01311	0.01582	0.01933	0.02319	5000	25000
H[29]	0.01415	0.004455	1.258E-4	0.009458	0.01095	0.01327	0.01635	0.01992	5000	25000
H[30]	0.01574	0.00509	1.435E-4	0.01044	0.01211	0.01473	0.01818	0.02224	5000	25000
H[31]	0.02024	0.006332	1.782E-4	0.01353	0.01567	0.01901	0.02337	0.02841	5000	25000
H[32]	0.01976	0.00621	1.746E-4	0.01317	0.01529	0.01857	0.02283	0.02784	5000	25000
H[33]	0.02052	0.006406	1.819E-4	0.01367	0.01588	0.0193	0.02372	0.02893	5000	25000
H[34]	0.02268	0.007414	2.114E-4	0.01486	0.01736	0.02121	0.02641	0.03222	5000	25000
H[35]	0.02507	0.008422	2.392E-4	0.01624	0.01907	0.02338	0.0292	0.03584	5000	25000
H[36]	0.02537	0.00874	2.46E-4	0.01624	0.01916	0.02367	0.0296	0.03649	5000	25000
H[37]	0.02017	0.006899	1.896E-4	0.01286	0.01523	0.01883	0.02363	0.02919	5000	25000
HMSP	0.02241	0.01794	2.985E-4	0.006983	0.01023	0.01713	0.02866	0.04381	5000	25000
HRATIO	1.386	0.9786	0.01367	0.4326	0.6712	1.109	1.842	2.76	5000	25000
INDEXMSPFALL	14.28	11.43	0.1991	4.714	6.857	11.17	17.93	27.04	5000	25000
INDEXMSPSPR	9.547	7.804	0.1381	3.089	4.501	7.383	11.93	18.26	5000	25000
K	2012.0	475.0	11.88	1429.0	1677.0	1980.0	2313.0	2625.0	5000	25000
MSP	20.97	14.5	0.1602	7.305	10.67	17.15	27.0	39.18	5000	25000
RESIDFALL[1]	0.2507	0.5033	0.01615	-0.4063	-0.05379	0.2932	0.6019	0.8516	5000	25000
RESIDFALL[2]	-0.1559	0.4488	0.01194	-0.7428	-0.4265	-0.125	0.1582	0.383	5000	25000
RESIDFALL[3]	0.895	0.3978	0.008776	0.3761	0.6576	0.9243	1.172	1.374	5000	25000
RESIDFALL[4]	-0.6068	0.3168	0.005437	-1.02	-0.8045	-0.589	-0.3878	-0.219	5000	25000
RESIDFALL[5]	0.09995	0.2824	0.003845	-0.2638	-0.07656	0.1159	0.2923	0.4488	5000	25000
RESIDFALL[6]	0.707	0.2596	0.003109	0.3732	0.5422	0.718	0.8871	1.032	5000	25000
RESIDFALL[7]	-0.5977	0.2466	0.003206	-0.9132	-0.7564	-0.5885	-0.4285	-0.2913	5000	25000
RESIDFALL[8]	-0.4453	0.2415	0.003114	-0.758	-0.5995	-0.4363	-0.2792	-0.146	5000	25000

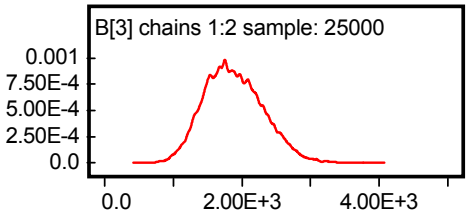
RESIDFALL[9]	0.3264	0.2334	0.002522	0.02666	0.1782	0.3363	0.4865	0.6158	5000	25000
RESIDFALL[10]	0.1089	0.2292	0.002304	-0.1853	-0.03555	0.1193	0.2665	0.3911	5000	25000
RESIDFALL[11]	-0.1894	0.2288	0.00206	-0.4852	-0.3329	-0.1767	-0.03381	0.09308	5000	25000
RESIDFALL[12]	-0.9696	0.2254	0.002054	-1.259	-1.111	-0.96	-0.8145	-0.6927	5000	25000
RESIDFALL[13]	-0.03503	0.2348	0.002502	-0.3421	-0.1776	-0.01626	0.1288	0.247	5000	25000
RESIDFALL[14]	0.1494	0.2475	0.003083	-0.1732	0.001005	0.1714	0.3242	0.445	5000	25000
RESIDFALL[15]	-0.1466	0.2593	0.003634	-0.4853	-0.3008	-0.1221	0.03503	0.1629	5000	25000
RESIDFALL[16]	1.006	0.2742	0.004112	0.6483	0.846	1.032	1.197	1.33	5000	25000
RESIDFALL[17]	-0.1077	0.2464	0.003234	-0.426	-0.2558	-0.08743	0.06318	0.1886	5000	25000
RESIDFALL[18]	0.3039	0.2354	0.003004	-0.003716	0.1613	0.3229	0.4671	0.59	5000	25000
RESIDFALL[19]	-0.6033	0.2238	0.002591	-0.8922	-0.7408	-0.5875	-0.4497	-0.3298	5000	25000
RESIDFALL[20]	-0.1186	0.2241	0.002596	-0.4075	-0.2544	-0.1038	0.03762	0.1526	5000	25000
RESIDFALL[21]	1.391	0.2397	0.003036	1.078	1.248	1.411	1.557	1.68	5000	25000
RESIDFALL[22]	-0.2372	0.2367	0.002962	-0.5422	-0.381	-0.2184	-0.07389	0.0481	5000	25000
RESIDFALL[23]	2.08	0.2605	0.003675	1.746	1.928	2.105	2.262	2.389	5000	25000
RESIDFALL[24]	-0.3275	0.2256	0.00283	-0.6196	-0.4635	-0.3086	-0.1722	-0.05427	5000	25000
RESIDFALL[25]	-0.03789	0.2176	0.002549	-0.3222	-0.17	-0.01928	0.1129	0.223	5000	25000
RESIDFALL[26]	0.2472	0.2072	0.00231	-0.02281	0.121	0.266	0.3931	0.4948	5000	25000
RESIDFALL[27]	0.605	0.1998	0.002278	0.3451	0.4856	0.6227	0.7451	0.8428	5000	25000
RESIDFALL[28]	0.2533	0.1765	0.001794	0.02377	0.148	0.2661	0.3751	0.4664	5000	25000
RESIDFALL[29]	-0.3158	0.1527	0.001496	-0.5124	-0.4114	-0.3089	-0.2111	-0.128	5000	25000
RESIDFALL[30]	-0.1454	0.1437	0.001549	-0.3306	-0.2367	-0.1402	-0.04717	0.03289	5000	25000
RESIDFALL[31]	0.2359	0.1368	0.001504	0.05936	0.1492	0.2428	0.3299	0.4052	5000	25000
RESIDFALL[32]	-0.2429	0.1322	0.001542	-0.4148	-0.3266	-0.2351	-0.1527	-0.08032	5000	25000
RESIDFALL[33]	0.6364	0.1288	0.001615	0.4702	0.5548	0.6436	0.726	0.7947	5000	25000
RESIDFALL[34]	-0.5019	0.1284	0.00184	-0.6686	-0.5828	-0.4951	-0.4122	-0.3452	5000	25000
RESIDFALL[35]	-0.03761	0.1279	0.001955	-0.2041	-0.1178	-0.02909	0.05118	0.1189	5000	25000
RESIDFALL[36]	-0.2309	0.134	0.002104	-0.4053	-0.3129	-0.2212	-0.1372	-0.06793	5000	25000
RESIDFALL[37]	0.003198	0.1438	0.00208	-0.1842	-0.08634	0.01458	0.1041	0.178	5000	25000
RESIDSPR[1]	-1.045	0.9137	0.02745	-2.241	-1.591	-0.9521	-0.4022	0.03523	5000	25000
RESIDSPR[2]	-2.442	0.8344	0.02102	-3.536	-2.947	-2.364	-1.851	-1.444	5000	25000
RESIDSPR[3]	-3.129	0.7528	0.01606	-4.112	-3.581	-3.06	-2.605	-2.231	5000	25000
RESIDSPR[4]	-1.394	0.5984	0.01047	-2.173	-1.764	-1.345	-0.9778	-0.6648	5000	25000
RESIDSPR[5]	-1.76	0.5215	0.007596	-2.445	-2.081	-1.719	-1.4	-1.124	5000	25000
RESIDSPR[6]	1.962	0.4775	0.006224	1.345	1.665	1.993	2.297	2.545	5000	25000
RESIDSPR[7]	0.6688	0.445	0.00603	0.08935	0.3917	0.6948	0.9802	1.214	5000	25000
RESIDSPR[8]	3.797	0.4288	0.005571	3.24	3.53	3.824	4.097	4.322	5000	25000
RESIDSPR[9]	1.261	0.4228	0.00489	0.7087	0.994	1.291	1.555	1.773	5000	25000
RESIDSPR[10]	1.692	0.4166	0.004526	1.148	1.434	1.719	1.982	2.202	5000	25000
RESIDSPR[11]	2.451	0.4113	0.003877	1.918	2.193	2.475	2.737	2.955	5000	25000
RESIDSPR[12]	-0.4278	0.4013	0.00366	-0.9499	-0.68	-0.4034	-0.1491	0.06555	5000	25000
RESIDSPR[13]	-0.05601	0.4125	0.003738	-0.5965	-0.3096	-0.02524	0.2309	0.4423	5000	25000
RESIDSPR[14]	0.8694	0.4294	0.004421	0.3061	0.6103	0.909	1.17	1.384	5000	25000
RESIDSPR[15]	-0.8837	0.4433	0.005091	-1.463	-1.148	-0.842	-0.5751	-0.3568	5000	25000
RESIDSPR[16]	-1.535	0.4633	0.005774	-2.144	-1.803	-1.487	-1.212	-0.9863	5000	25000
RESIDSPR[17]	-0.5853	0.4201	0.004432	-1.132	-0.8388	-0.5492	-0.2935	-0.08251	5000	25000
RESIDSPR[18]	-0.1064	0.4079	0.003973	-0.6397	-0.3543	-0.07218	0.1773	0.3861	5000	25000
RESIDSPR[19]	-0.002592	0.3889	0.003377	-0.5061	-0.24	0.02592	0.2709	0.4667	5000	25000
RESIDSPR[20]	0.9419	0.3906	0.003446	0.4347	0.7041	0.9734	1.215	1.411	5000	25000
RESIDSPR[21]	-1.026	0.414	0.004246	-1.563	-1.271	-0.99	-0.7331	-0.5304	5000	25000
RESIDSPR[22]	-0.3981	0.4102	0.004226	-0.9308	-0.6435	-0.363	-0.1108	0.09424	5000	25000
RESIDSPR[23]	1.107	0.4446	0.005326	0.5283	0.8468	1.149	1.417	1.632	5000	25000
RESIDSPR[24]	-1.135	0.392	0.004018	-1.655	-1.37	-1.101	-0.8603	-0.6634	5000	25000
RESIDSPR[25]	-1.977	0.3777	0.003614	-2.475	-2.207	-1.945	-1.712	-1.524	5000	25000
RESIDSPR[26]	-1.031	0.3608	0.003314	-1.501	-1.248	-0.9984	-0.7785	-0.5996	5000	25000
RESIDSPR[27]	-0.01257	0.3466	0.0033	-0.463	-0.218	0.02069	0.2297	0.3999	5000	25000
RESIDSPR[28]	-1.105	0.3079	0.002635	-1.504	-1.291	-1.081	-0.8899	-0.7343	5000	25000
RESIDSPR[29]	4.368	0.2662	0.002137	4.024	4.205	4.384	4.55	4.695	5000	25000
RESIDSPR[30]	-1.014	0.2483	0.00229	-1.338	-1.17	-0.9972	-0.8442	-0.7077	5000	25000
RESIDSPR[31]	-0.9661	0.2365	0.002189	-1.274	-1.114	-0.951	-0.8008	-0.6776	5000	25000
RESIDSPR[32]	0.1994	0.2266	0.002199	-0.09408	0.05926	0.2127	0.3564	0.4771	5000	25000
RESIDSPR[33]	-0.4694	0.2214	0.002262	-0.7574	-0.607	-0.4552	-0.3157	-0.1989	5000	25000
qFALL	0.001605	4.437E-4	1.308E-5	0.00112	0.001274	0.001522	0.001836	0.002187	5000	25000
qSPR	0.002433	7.211E-4	2.095E-5	0.001658	0.001908	0.002297	0.002812	0.003379	5000	25000

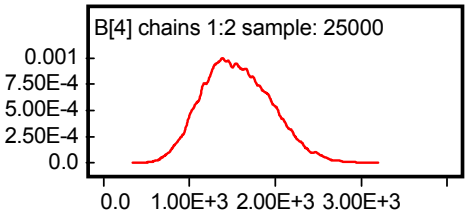
r	0.04481	0.03588	5.97E-4	0.01397	0.02046	0.03427	0.05732	0.08762	5000	25000
sigma2	0.01122	0.007507	1.548E-4	0.004377	0.006287	0.009359	0.01389	0.02017	5000	25000
tau2FALL	0.1141	0.03085	3.14E-4	0.07932	0.09224	0.1094	0.1309	0.1542	5000	25000
tau2SPR	0.2885	0.07484	5.137E-4	0.2042	0.2359	0.2769	0.3291	0.3861	5000	25000

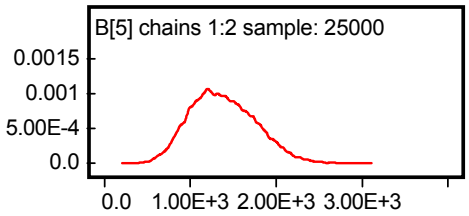
Marginal Distributions

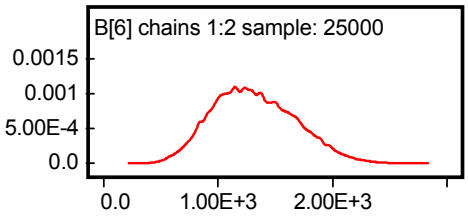


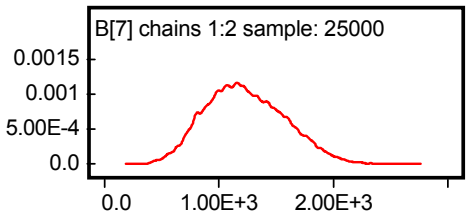


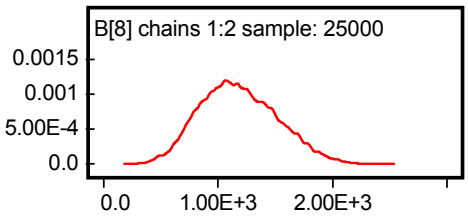


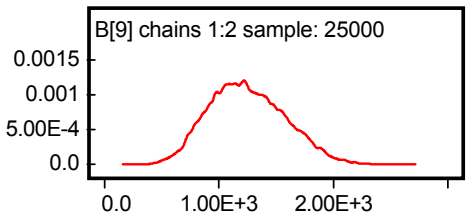


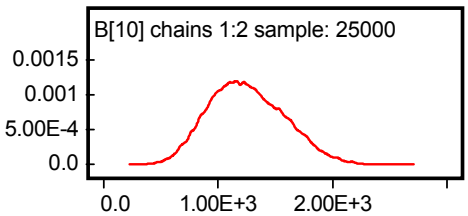


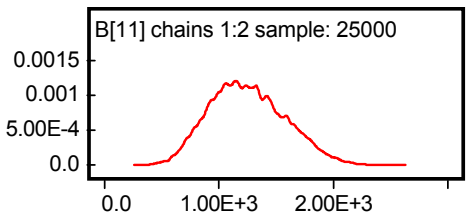


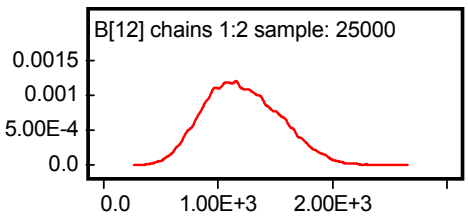


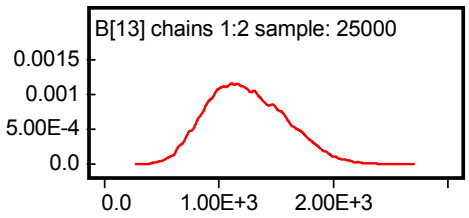








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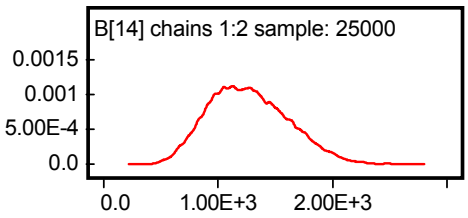
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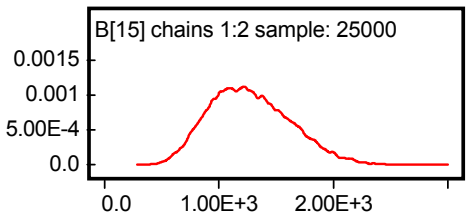
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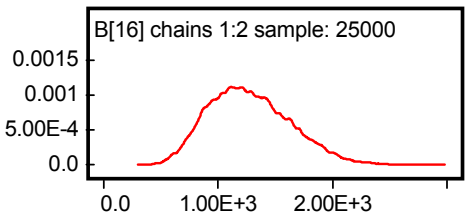
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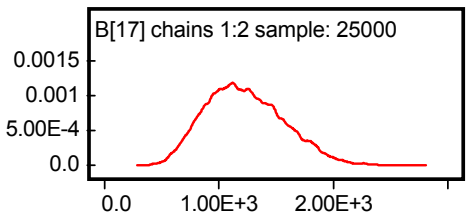
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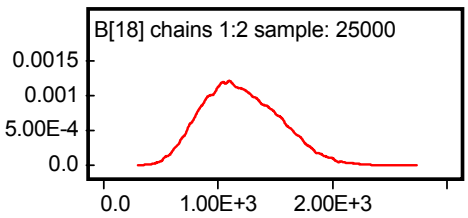
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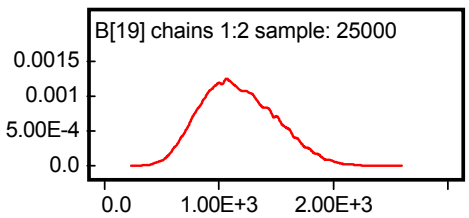
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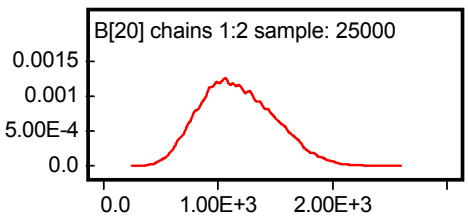
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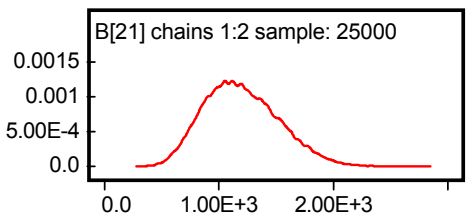
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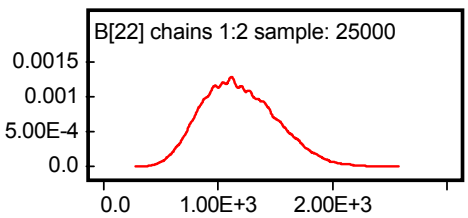
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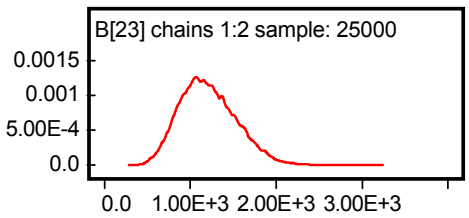
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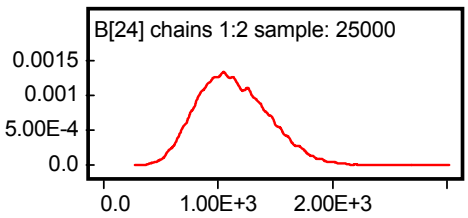
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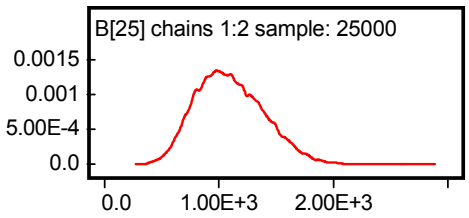
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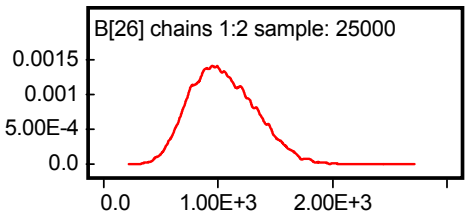
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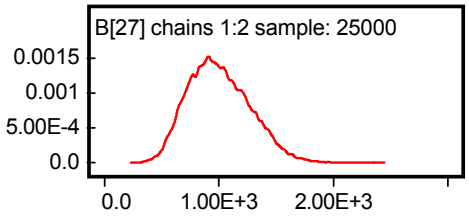
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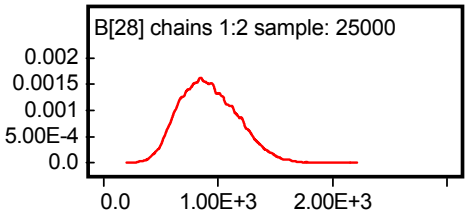
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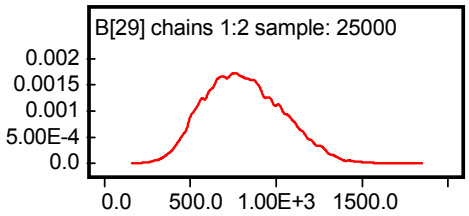
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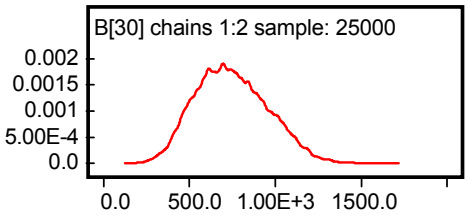
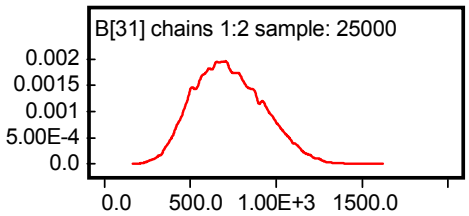
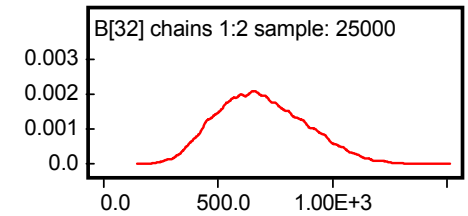
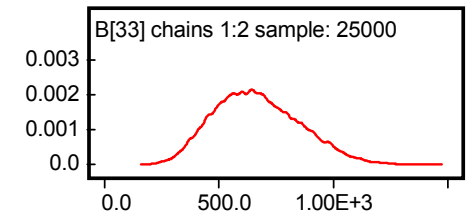
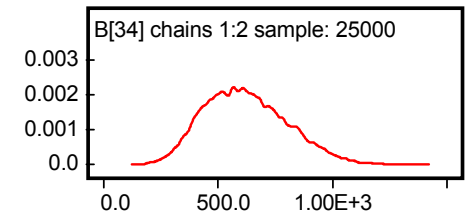
0.0015
0.001
5.00E-4
0.0
0.0
500.0
1.00E+3
1500.0

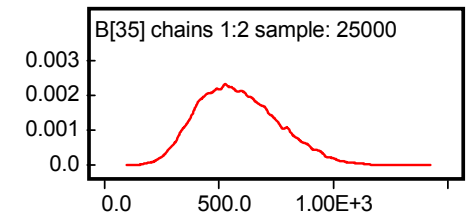

B[30] chains 1:2 sample: 25000
0.002
0.0015
0.001
5.00E-4
0.0
0.0
500.0
1.00E+3
1500.0

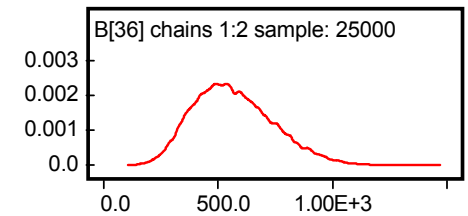

B[31] chains 1:2 sample: 25000
0.002
0.0015
0.001
5.00E-4
0.0
0.0
500.0
1.00E+3
1500.0

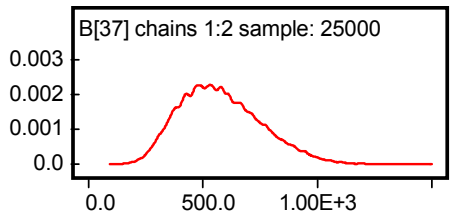

B[32] chains 1:2 sample: 25000
0.003
0.002
0.001
0.0
0.0
500.0
1.00E+3

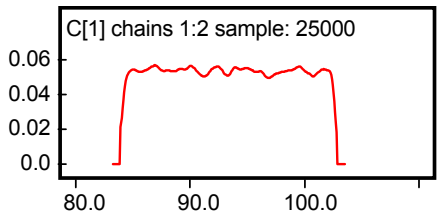

B[33] chains 1:2 sample: 25000
0.003
0.002
0.001
0.0
0.0
500.0
1.00E+3

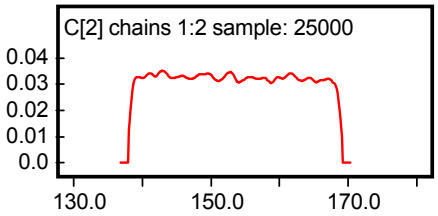

B[34] chains 1:2 sample: 25000
0.003
0.002
0.001
0.0
0.0
500.0
1.00E+3

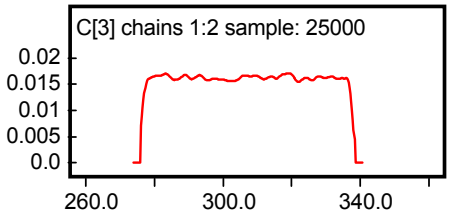

B[35] chains 1:2 sample: 25000
0.003
0.002
0.001
0.0
0.0
500.0
1.00E+3

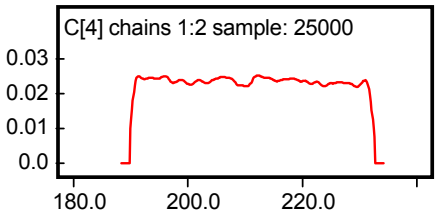

B[36] chains 1:2 sample: 25000
0.003
0.002
0.001
0.0
0.0
500.0
1.00E+3

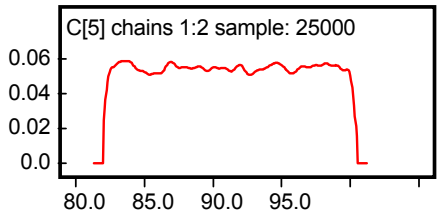

B[37] chains 1:2 sample: 25000
0.003
0.002
0.001
0.0
0.0
500.0
1.00E+3

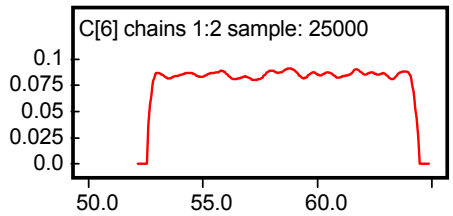

C[1] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
80.0
90.0
100.0

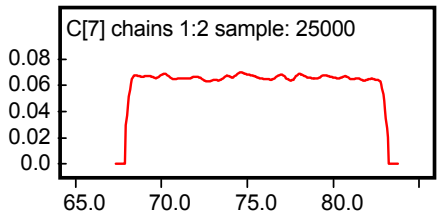

C[2] chains 1:2 sample: 25000
0.04
0.03
0.02
0.01
0.0
130.0
150.0
170.0

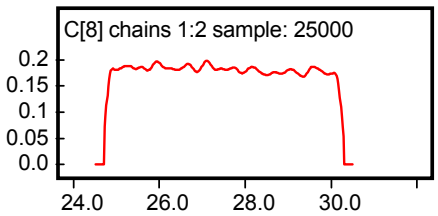

C[3] chains 1:2 sample: 25000
0.02
0.015
0.01
0.005
0.0
260.0
300.0
340.0

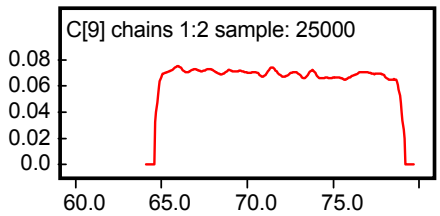

C[4] chains 1:2 sample: 25000
0.03
0.02
0.01
0.0
180.0
200.0
220.0

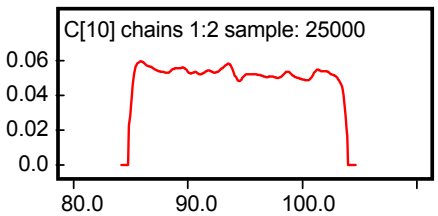

C[5] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
80.0
85.0
90.0
95.0

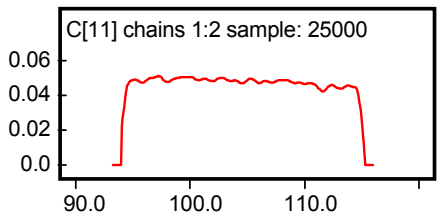

C[6] chains 1:2 sample: 25000
0.1
0.075
0.05
0.025
0.0
50.0
55.0
60.0

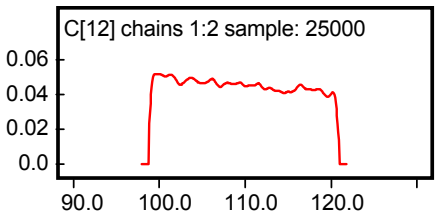

C[7] chains 1:2 sample: 25000
0.08
0.06
0.04
0.02
0.0
65.0
70.0
75.0
80.0

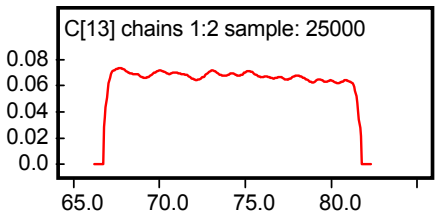

C[8] chains 1:2 sample: 25000
0.2
0.15
0.1
0.05
0.0
24.0
26.0
28.0
30.0

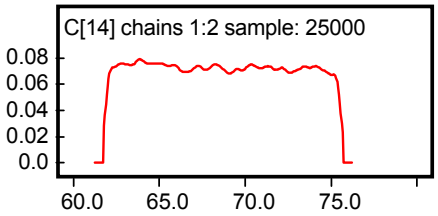

C[9] chains 1:2 sample: 25000
0.08
0.06
0.04
0.02
0.0
60.0
65.0
70.0
75.0

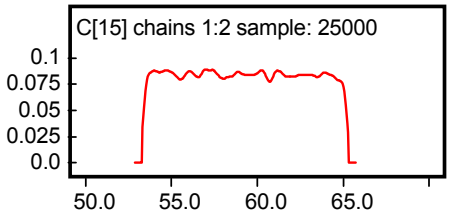

C[10] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
80.0
90.0
100.0

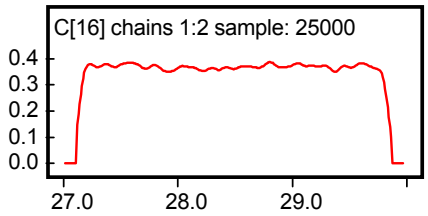

C[11] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
90.0
100.0
110.0

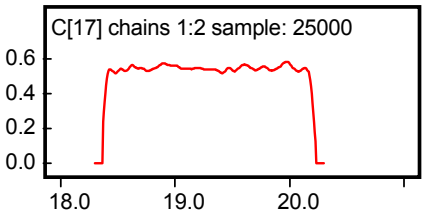

C[12] chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
90.0
100.0
110.0
120.0

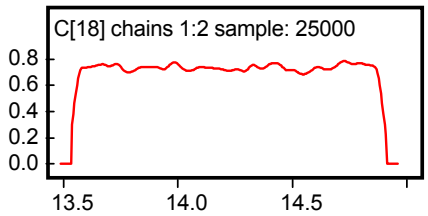

C[13] chains 1:2 sample: 25000
0.08
0.06
0.04
0.02
0.0
65.0
70.0
75.0
80.0

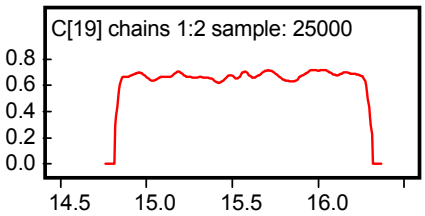

C[14] chains 1:2 sample: 25000
0.08
0.06
0.04
0.02
0.0
60.0
65.0
70.0
75.0

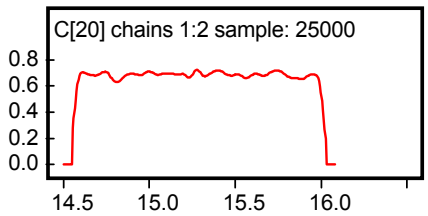

C[15] chains 1:2 sample: 25000
0.1
0.075
0.05
0.025
0.0
50.0
55.0
60.0
65.0

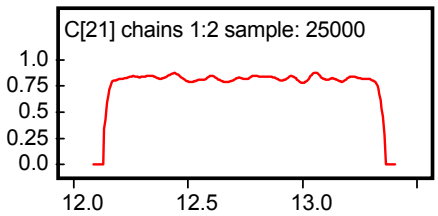

C[16] chains 1:2 sample: 25000
0.4
0.3
0.2
0.1
0.0
27.0
28.0
29.0

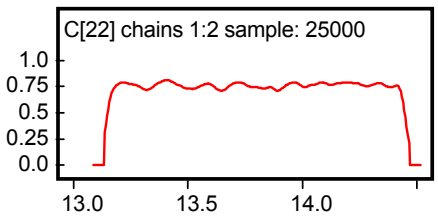

C[17] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
18.0
19.0
20.0

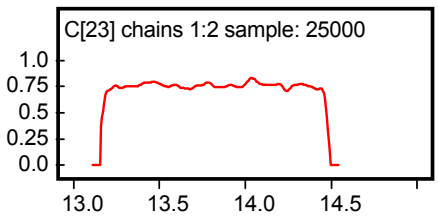

C[18] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
13.5
14.0
14.5

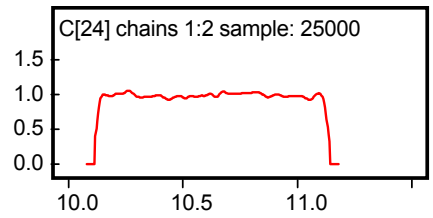

C[19] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
14.5
15.0
15.5
16.0

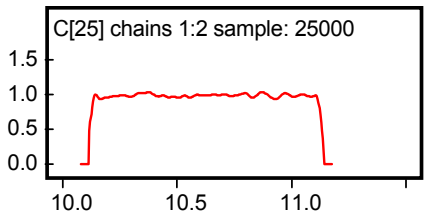

C[20] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
14.5
15.0
15.5
16.0

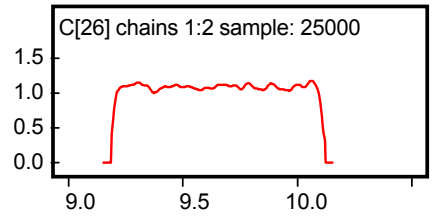

C[21] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
12.0
12.5
13.0

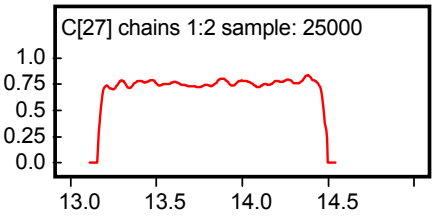

C[22] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
13.0
13.5
14.0

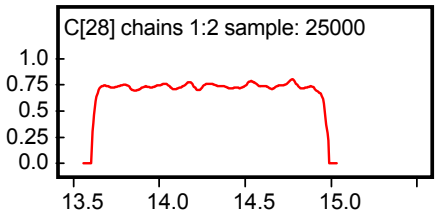

C[23] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
13.0
13.5
14.0
14.5

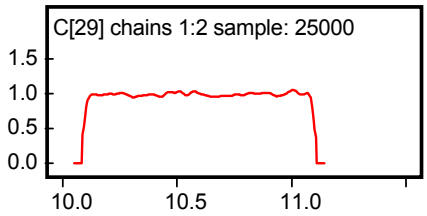

C[24] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
10.0
10.5
11.0

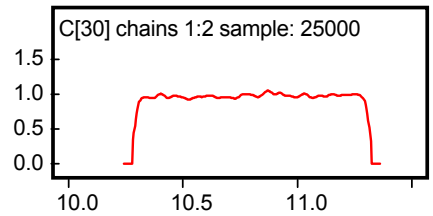

C[25] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
10.0
10.5
11.0

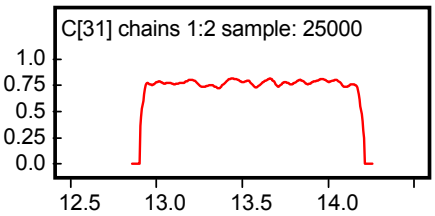

C[26] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
9.0
9.5
10.0

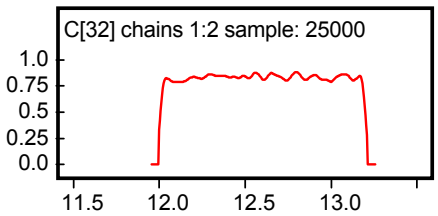

C[27] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
13.0
13.5
14.0
14.5

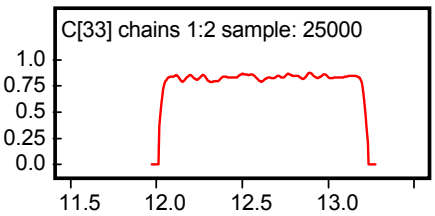

C[28] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
13.5
14.0
14.5
15.0

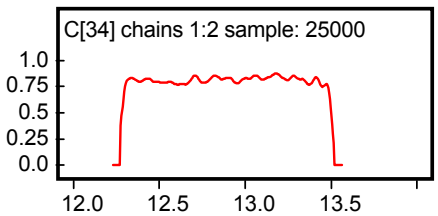

C[29] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
10.0
10.5
11.0

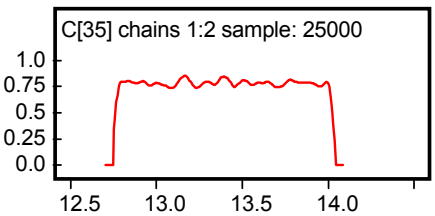

C[30] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
10.0
10.5
11.0

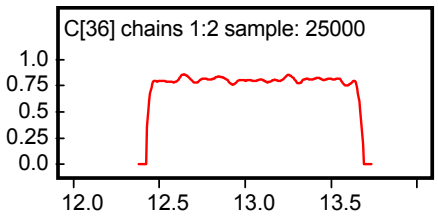

C[31] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
12.5
13.0
13.5
14.0

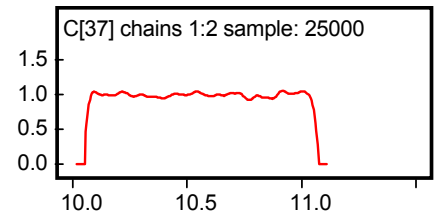

C[32] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
11.5
12.0
12.5
13.0

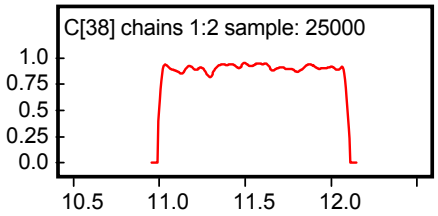

C[33] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
11.5
12.0
12.5
13.0

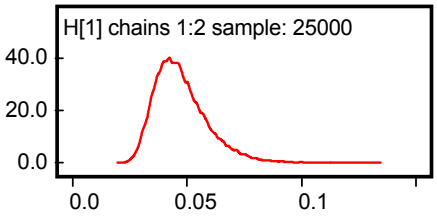

C[34] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
12.0
12.5
13.0
13.5

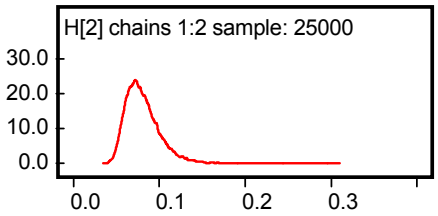

C[35] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
12.5
13.0
13.5
14.0

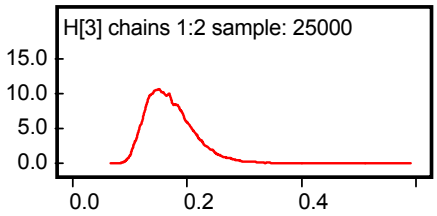

C[36] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
12.0
12.5
13.0
13.5

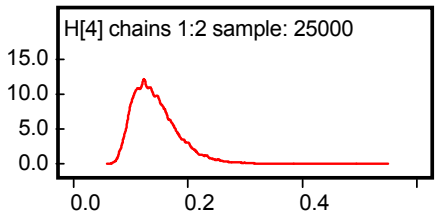

C[37] chains 1:2 sample: 25000
1.5
1.0
0.5
0.0
10.0
10.5
11.0

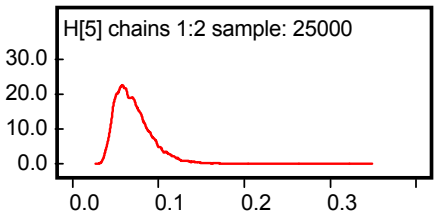

C[38] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
10.5
11.0
11.5
12.0

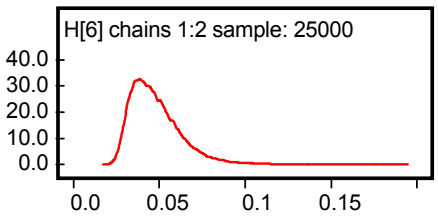

H[1] chains 1:2 sample: 25000
40.0
20.0
0.0
0.0
0.05
0.1

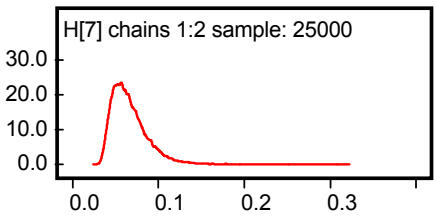

H[2] chains 1:2 sample: 25000
30.0
20.0
10.0
0.0
0.0
0.1
0.2
0.3

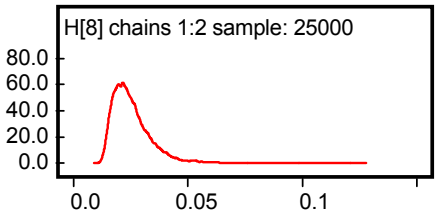

H[3] chains 1:2 sample: 25000
15.0
10.0
5.0
0.0
0.0
0.2
0.4

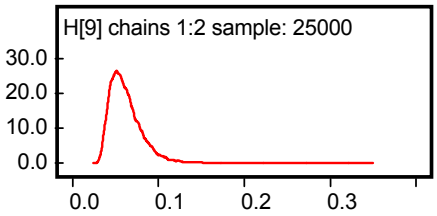

H[4] chains 1:2 sample: 25000
15.0
10.0
5.0
0.0
0.0
0.2
0.4

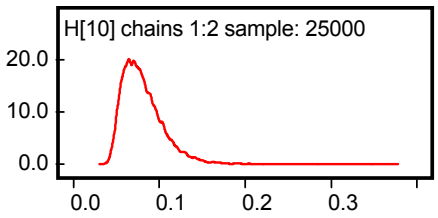

H[5] chains 1:2 sample: 25000
30.0
20.0
10.0
0.0
0.0
0.1
0.2
0.3

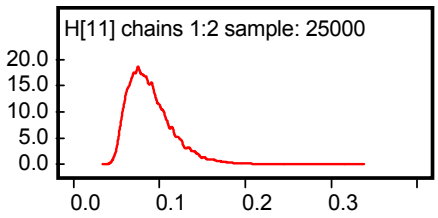

H[6] chains 1:2 sample: 25000
40.0
30.0
20.0
10.0
0.0
0.0
0.05
0.1
0.15

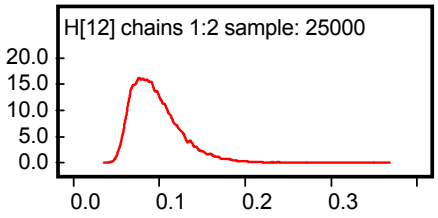

H[7] chains 1:2 sample: 25000
30.0
20.0
10.0
0.0
0.0
0.1
0.2
0.3

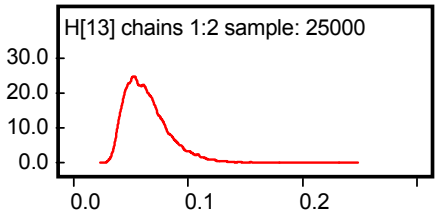

H[8] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.05
0.1

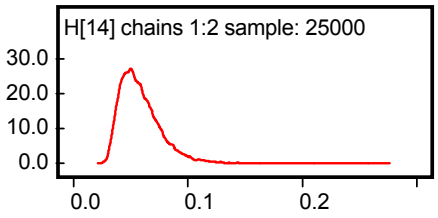

H[9] chains 1:2 sample: 25000
30.0
20.0
10.0
0.0
0.0
0.1
0.2
0.3

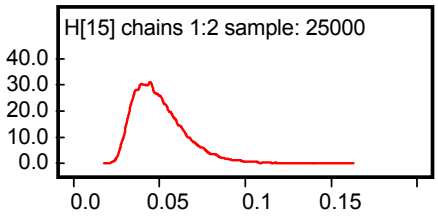

H[10] chains 1:2 sample: 25000
20.0
10.0
0.0
0.0
0.1
0.2
0.3

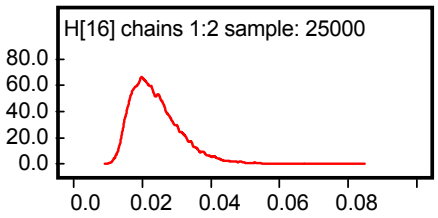

H[11] chains 1:2 sample: 25000
20.0
15.0
10.0
5.0
0.0
0.0
0.1
0.2
0.3

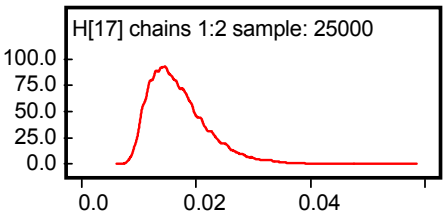

H[12] chains 1:2 sample: 25000
20.0
15.0
10.0
5.0
0.0
0.0
0.1
0.2
0.3

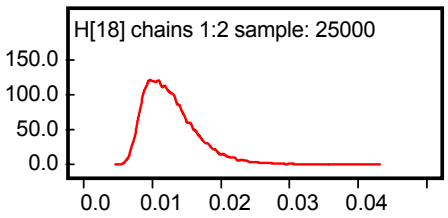

H[13] chains 1:2 sample: 25000
30.0
20.0
10.0
0.0
0.0
0.1
0.2

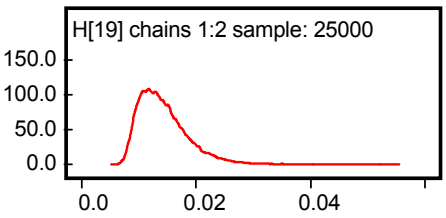

H[14] chains 1:2 sample: 25000
30.0
20.0
10.0
0.0
0.0
0.1
0.2

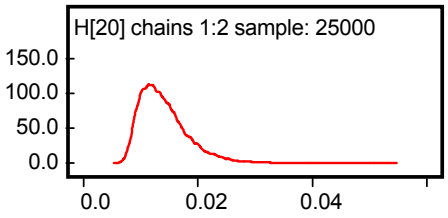

H[15] chains 1:2 sample: 25000
40.0
30.0
20.0
10.0
0.0
0.0
0.05
0.1
0.15

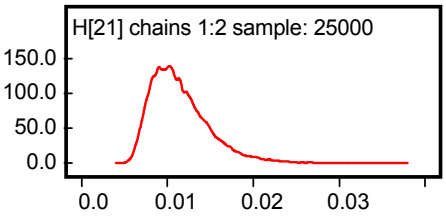

H[16] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.02
0.04
0.06
0.08

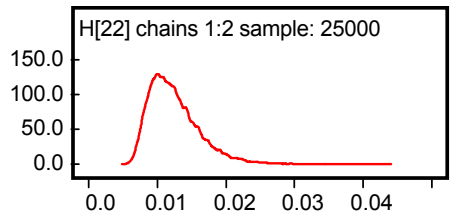

H[17] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04

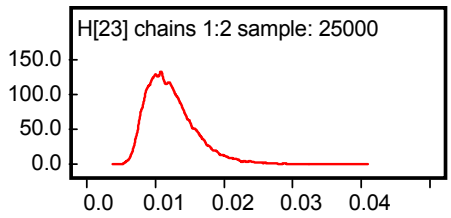

H[18] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03
0.04

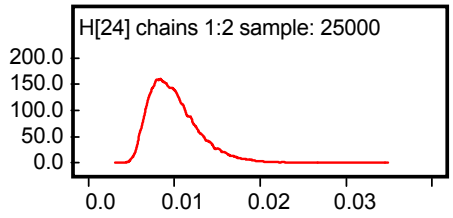

H[19] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.02
0.04

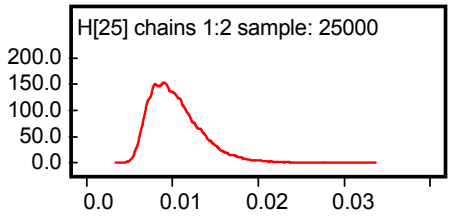

H[20] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.02
0.04

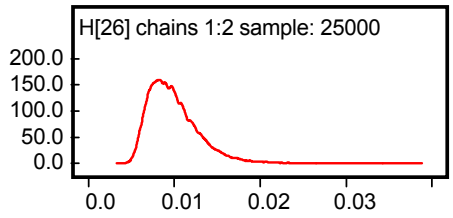

H[21] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03

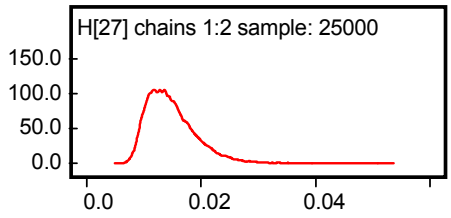

H[22] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03
0.04

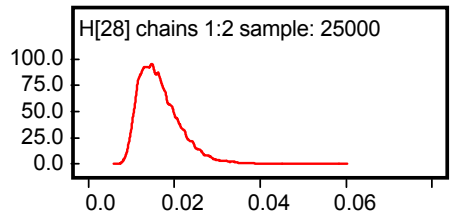

H[23] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03
0.04

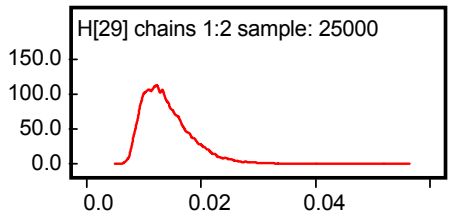

H[24] chains 1:2 sample: 25000
200.0
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03

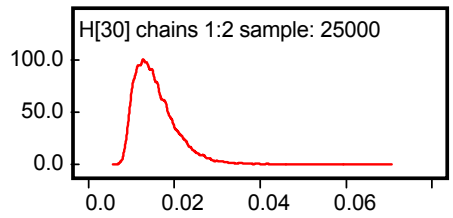

H[25] chains 1:2 sample: 25000
200.0
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03

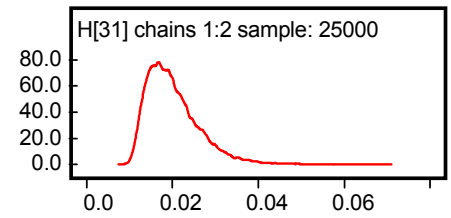

H[26] chains 1:2 sample: 25000
200.0
150.0
100.0
50.0
0.0
0.0
0.01
0.02
0.03

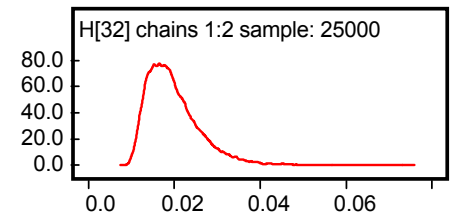

H[27] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.02
0.04

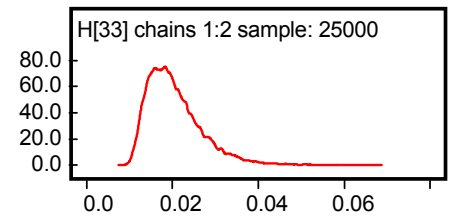

H[28] chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.02
0.04
0.06

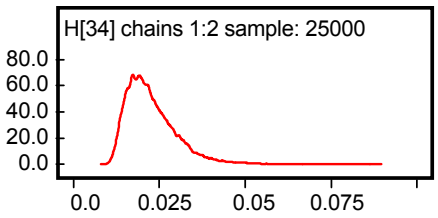

H[29] chains 1:2 sample: 25000
150.0
100.0
50.0
0.0
0.0
0.02
0.04

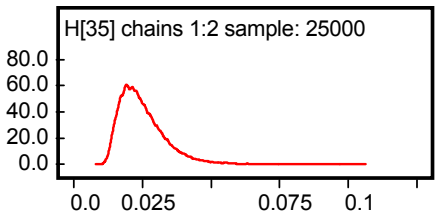

H[30] chains 1:2 sample: 25000
100.0
50.0
0.0
0.0
0.02
0.04
0.06

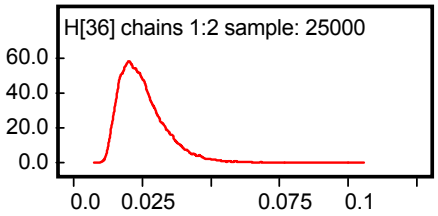

H[31] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.02
0.04
0.06

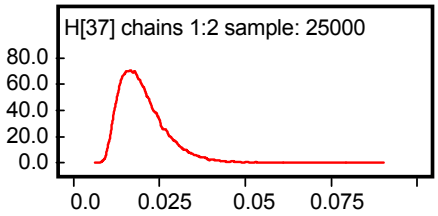

H[32] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.02
0.04
0.06

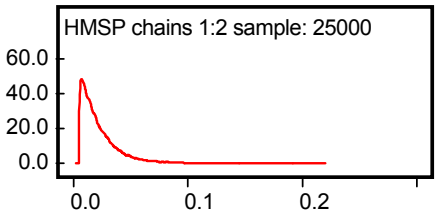

H[33] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.02
0.04
0.06

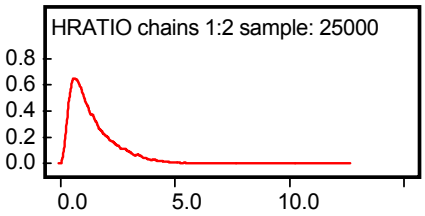

H[34] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.025
0.05
0.075

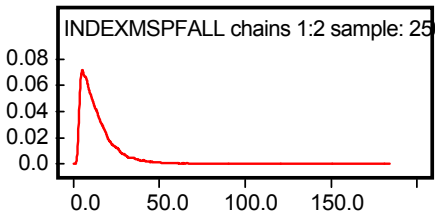

H[35] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.025
0.075
0.1

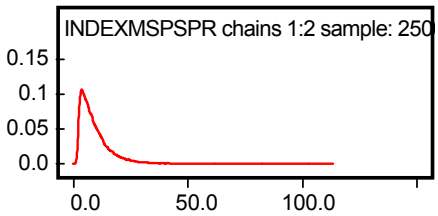

H[36] chains 1:2 sample: 25000
60.0
40.0
20.0
0.0
0.0
0.025
0.075
0.1

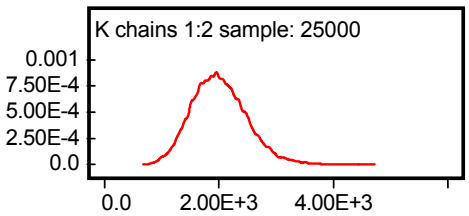

H[37] chains 1:2 sample: 25000
80.0
60.0
40.0
20.0
0.0
0.0
0.025
0.05
0.075

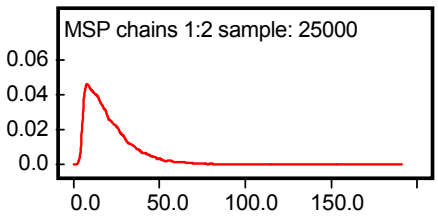

HMSP chains 1:2 sample: 25000
60.0
40.0
20.0
0.0
0.0
0.1
0.2

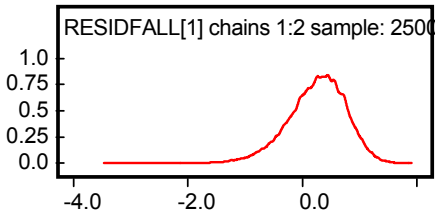

HRATIO chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
0.0
5.0
10.0

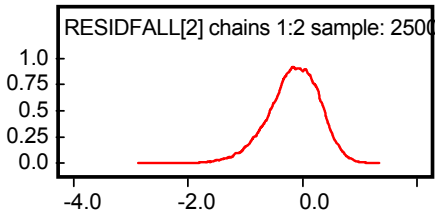

INDEXMSPFALL chains 1:2 sample: 25
0.08
0.06
0.04
0.02
0.0
0.0
50.0
100.0
150.0

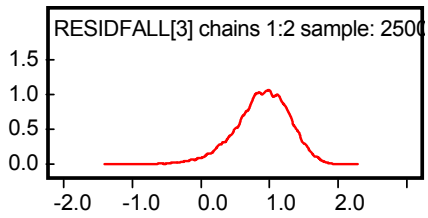

INDEXMSPSPR chains 1:2 sample: 250
0.15
0.1
0.05
0.0
0.0
50.0
100.0

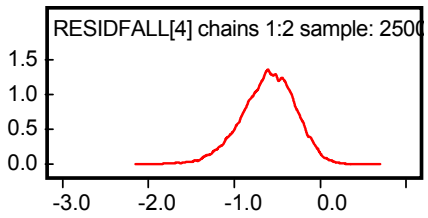

K chains 1:2 sample: 25000
0.001
7.50E-4
5.00E-4
2.50E-4
0.0
0.0
2.00E+3
4.00E+3

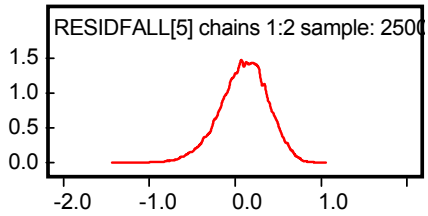

MSP chains 1:2 sample: 25000
0.06
0.04
0.02
0.0
0.0
50.0
100.0
150.0

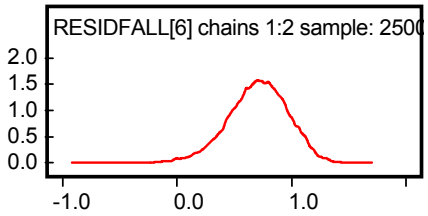

RESIDFALL[1] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

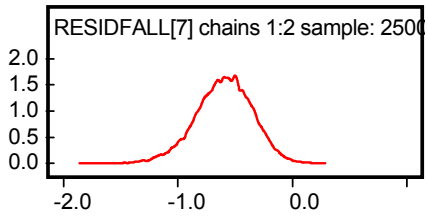

RESIDFALL[2] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

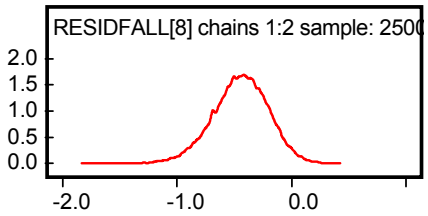

RESIDFALL[3] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0
2.0

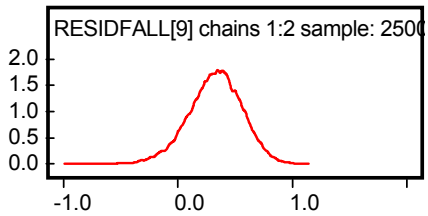

RESIDFALL[4] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0

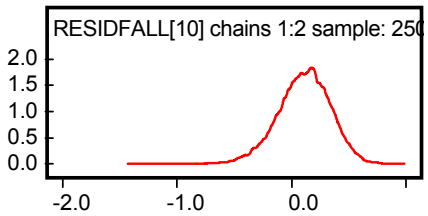

RESIDFALL[5] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0

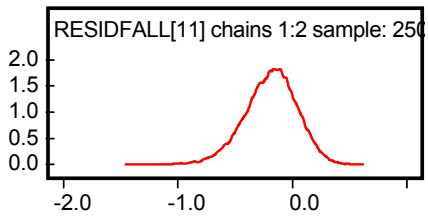

RESIDFALL[6] chains 1:2 sample: 2500
2.0
1.5
1.0
0.5
0.0
-1.0
0.0
1.0

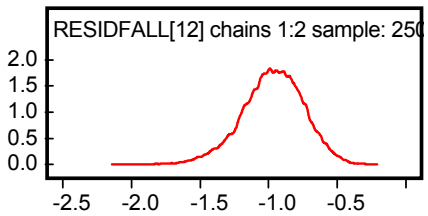

RESIDFALL[7] chains 1:2 sample: 2500
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

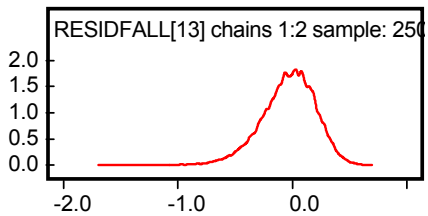

RESIDFALL[8] chains 1:2 sample: 2500
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

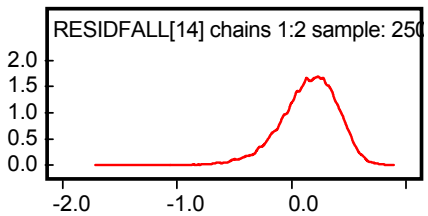

RESIDFALL[9] chains 1:2 sample: 2500
2.0
1.5
1.0
0.5
0.0
-1.0
0.0
1.0

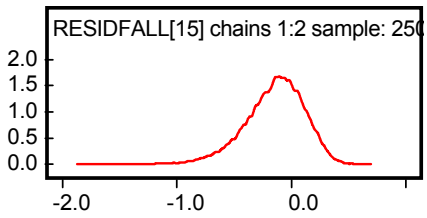

RESIDFALL[10] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

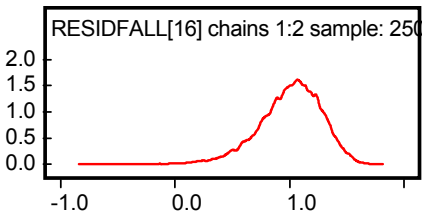

RESIDFALL[11] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

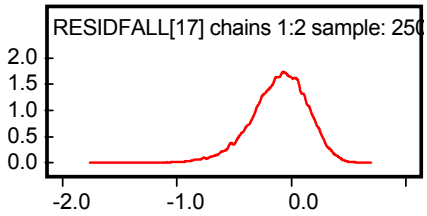

RESIDFALL[12] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.5
-2.0
-1.5
-1.0
-0.5

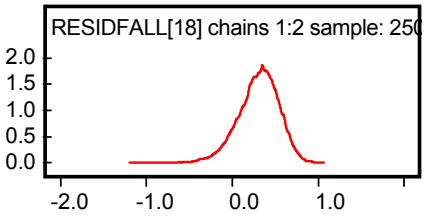

RESIDFALL[13] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

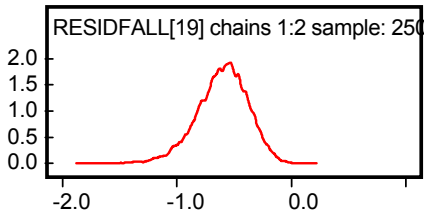

RESIDFALL[14] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

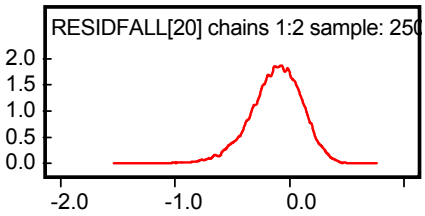

RESIDFALL[15] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

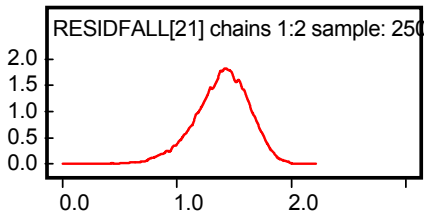

RESIDFALL[16] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-1.0
0.0
1.0

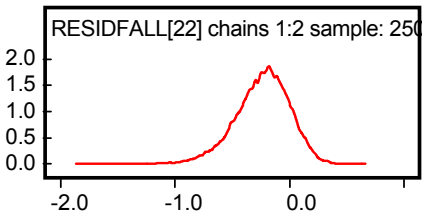

RESIDFALL[17] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

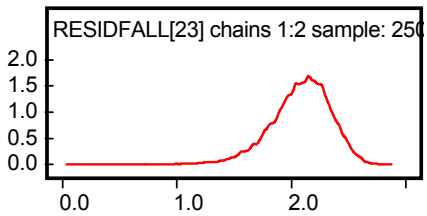

RESIDFALL[18] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0

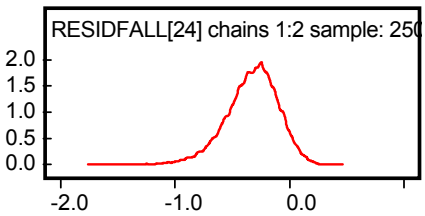

RESIDFALL[19] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

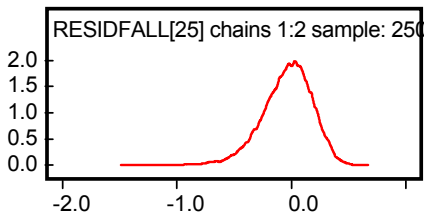

RESIDFALL[20] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

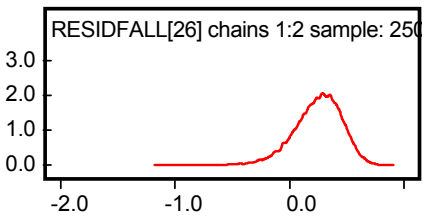

RESIDFALL[21] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
0.0
1.0
2.0

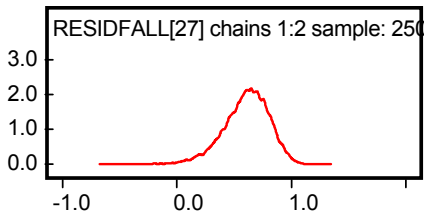

RESIDFALL[22] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

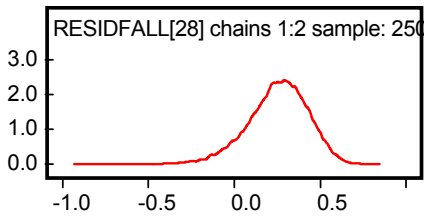

RESIDFALL[23] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
0.0
1.0
2.0

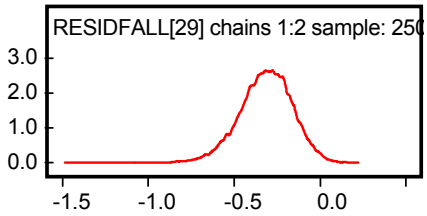

RESIDFALL[24] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

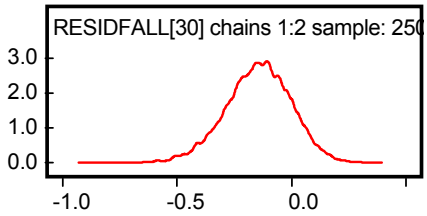

RESIDFALL[25] chains 1:2 sample: 250
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

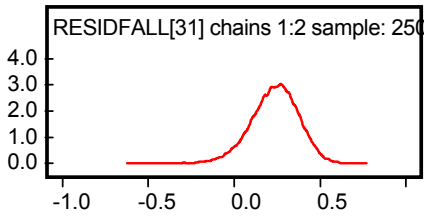

RESIDFALL[26] chains 1:2 sample: 250
3.0
2.0
1.0
0.0
-2.0
-1.0
0.0

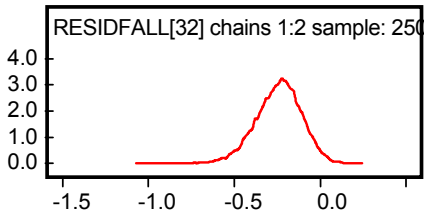

RESIDFALL[27] chains 1:2 sample: 250
3.0
2.0
1.0
0.0
-1.0
0.0
1.0

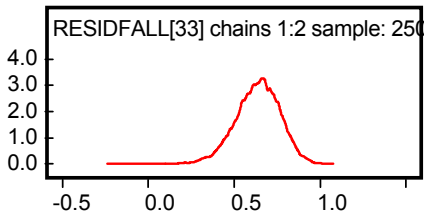

RESIDFALL[28] chains 1:2 sample: 250
3.0
2.0
1.0
0.0
-1.0
-0.5
0.0
0.5

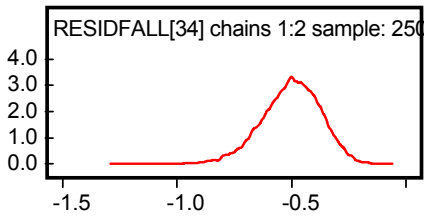

RESIDFALL[29] chains 1:2 sample: 250
3.0
2.0
1.0
0.0
-1.5
-1.0
-0.5
0.0

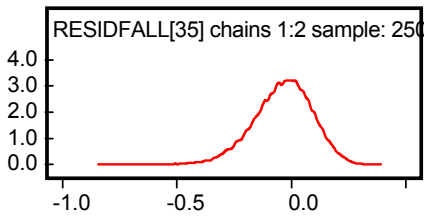

RESIDFALL[30] chains 1:2 sample: 250
3.0
2.0
1.0
0.0
-1.0
-0.5
0.0

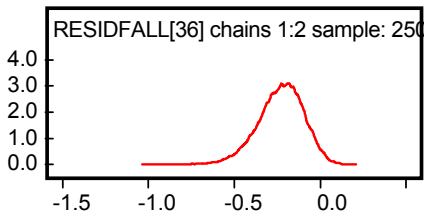

RESIDFALL[31] chains 1:2 sample: 250
4.0
3.0
2.0
1.0
0.0
-1.0
-0.5
0.0
0.5

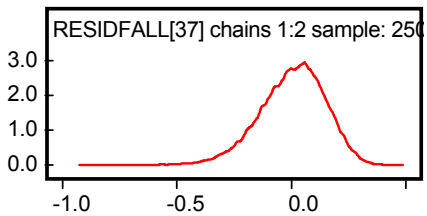

RESIDFALL[32] chains 1:2 sample: 250
4.0
3.0
2.0
1.0
0.0
-1.5
-1.0
-0.5
0.0

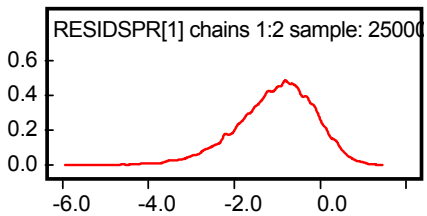

RESIDFALL[33] chains 1:2 sample: 250
4.0
3.0
2.0
1.0
0.0
-0.5
0.0
0.5
1.0

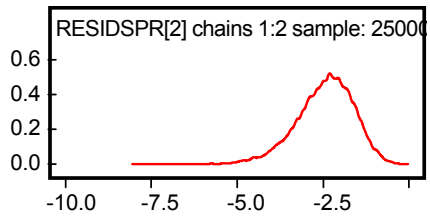

RESIDFALL[34] chains 1:2 sample: 250
4.0
3.0
2.0
1.0
0.0
-1.5
-1.0
-0.5

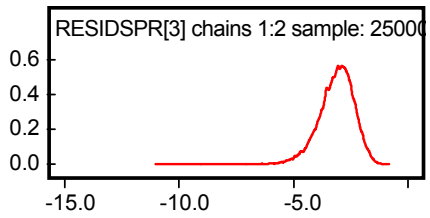

RESIDFALL[35] chains 1:2 sample: 250
4.0
3.0
2.0
1.0
0.0
-1.0
-0.5
0.0

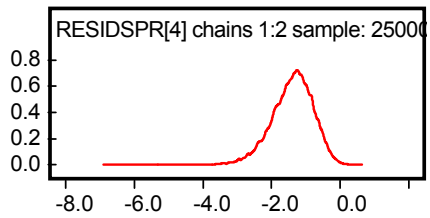

RESIDFALL[36] chains 1:2 sample: 250
4.0
3.0
2.0
1.0
0.0
-1.5
-1.0
-0.5
0.0

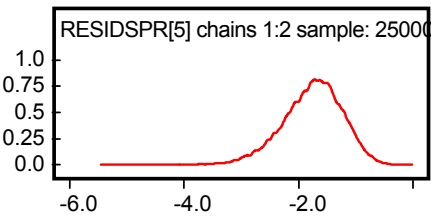

RESIDFALL[37] chains 1:2 sample: 250
3.0
2.0
1.0
0.0
-1.0
-0.5
0.0

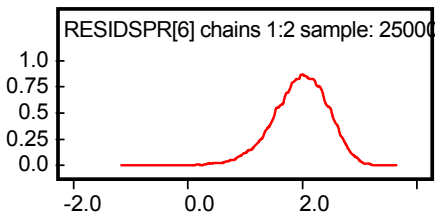

RESIDSPR[1] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
-6.0
-4.0
-2.0
0.0

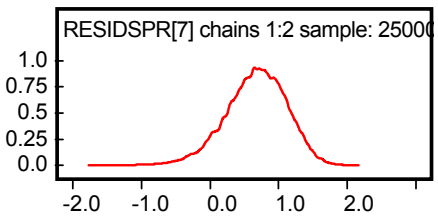

RESIDSPR[2] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
-10.0
-7.5
-5.0
-2.5

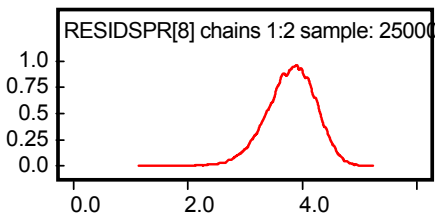

RESIDSPR[3] chains 1:2 sample: 25000
0.6
0.4
0.2
0.0
-15.0
-10.0
-5.0

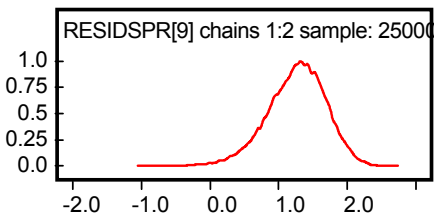

RESIDSPR[4] chains 1:2 sample: 25000
0.8
0.6
0.4
0.2
0.0
-8.0
-6.0
-4.0
-2.0
0.0

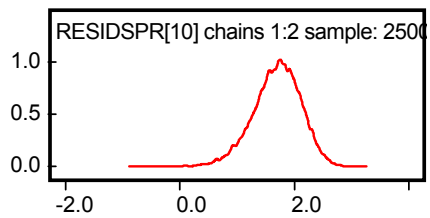

RESIDSPR[5] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
-6.0
-4.0
-2.0

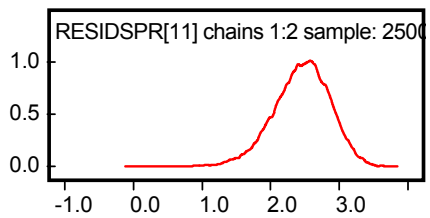

RESIDSPR[6] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
-2.0
0.0
2.0

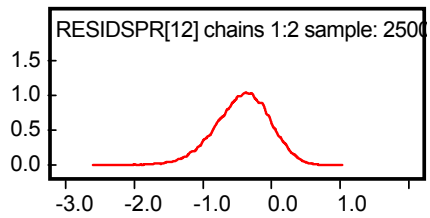

RESIDSPR[7] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
-2.0
-1.0
0.0
1.0
2.0

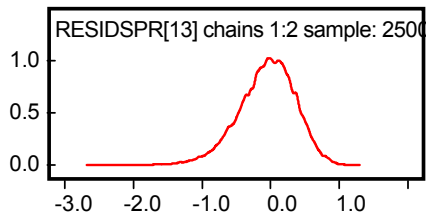

RESIDSPR[8] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
0.0
2.0
4.0

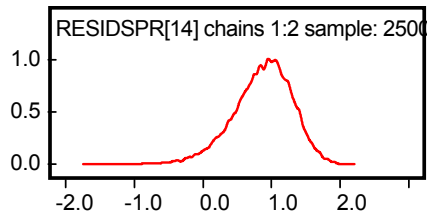

RESIDSPR[9] chains 1:2 sample: 25000
1.0
0.75
0.5
0.25
0.0
-2.0
-1.0
0.0
1.0
2.0

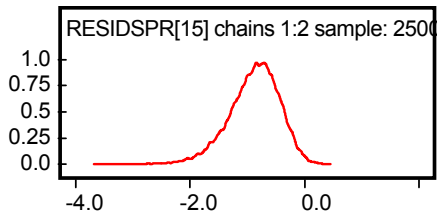

RESIDSPR[10] chains 1:2 sample: 2500
1.0
0.5
0.0
-2.0
0.0
2.0

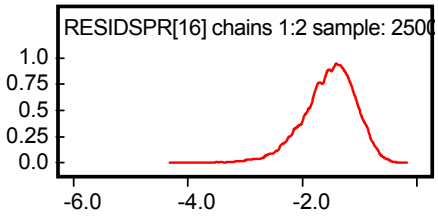

RESIDSPR[11] chains 1:2 sample: 2500
1.0
0.5
0.0
-1.0
0.0
1.0
2.0
3.0

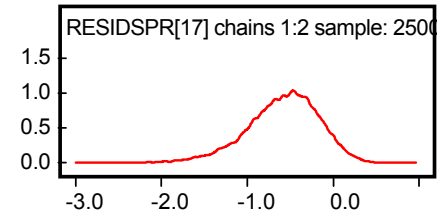

RESIDSPR[12] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0
1.0

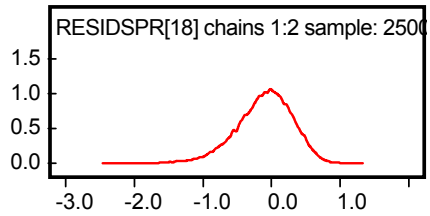

RESIDSPR[13] chains 1:2 sample: 2500
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0
1.0

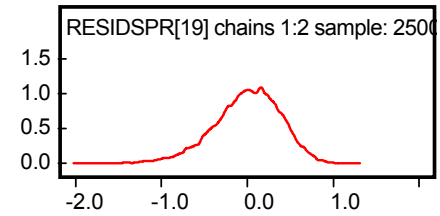

RESIDSPR[14] chains 1:2 sample: 2500
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0
2.0

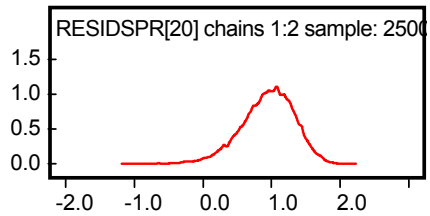

RESIDSPR[15] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0

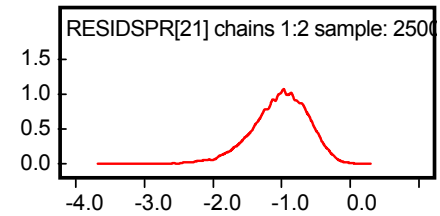

RESIDSPR[16] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-6.0
-4.0
-2.0

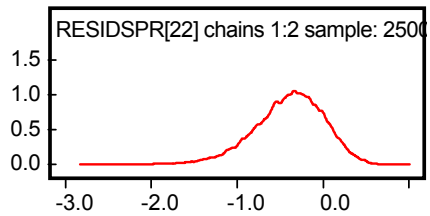

RESIDSPR[17] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0

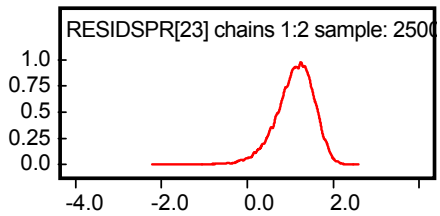

RESIDSPR[18] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0
1.0

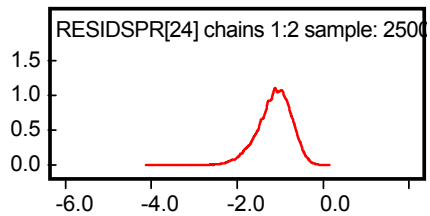

RESIDSPR[19] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0

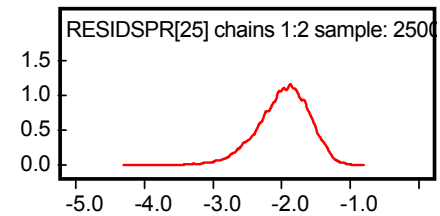

RESIDSPR[20] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0
1.0
2.0

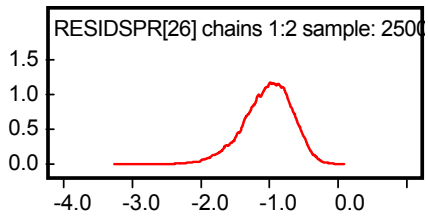

RESIDSPR[21] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0
0.0

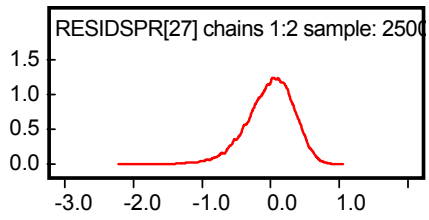

RESIDSPR[22] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0

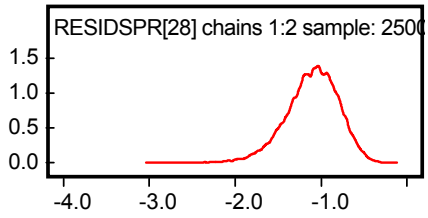

RESIDSPR[23] chains 1:2 sample: 2500
1.0
0.75
0.5
0.25
0.0
-4.0
-2.0
0.0
2.0

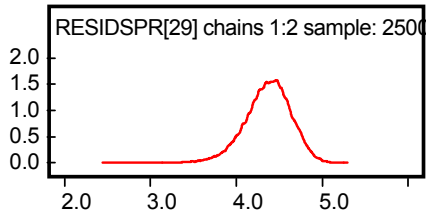

RESIDSPR[24] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-6.0
-4.0
-2.0
0.0

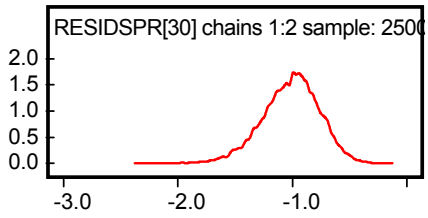

RESIDSPR[25] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-5.0
-4.0
-3.0
-2.0
-1.0

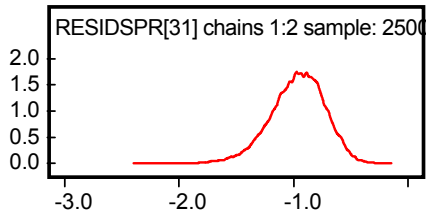

RESIDSPR[26] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0
0.0

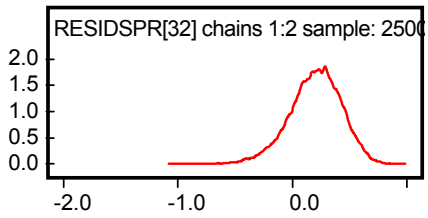

RESIDSPR[27] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0
0.0
1.0

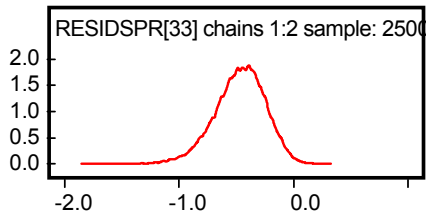

RESIDSPR[28] chains 1:2 sample: 2500
1.5
1.0
0.5
0.0
-4.0
-3.0
-2.0
-1.0

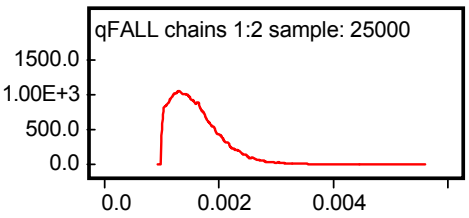

RESIDSPR[29] chains 1:2 sample: 2500
2.0
1.5
1.0
0.5
0.0
2.0
3.0
4.0
5.0

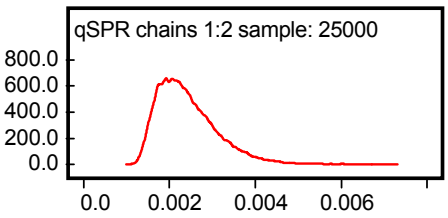

RESIDSPR[30] chains 1:2 sample: 2500
2.0
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0

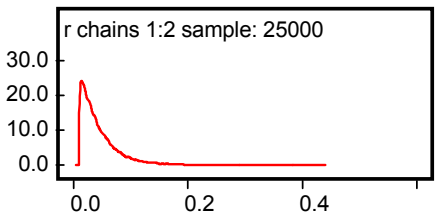

RESIDSPR[31] chains 1:2 sample: 2500
2.0
1.5
1.0
0.5
0.0
-3.0
-2.0
-1.0

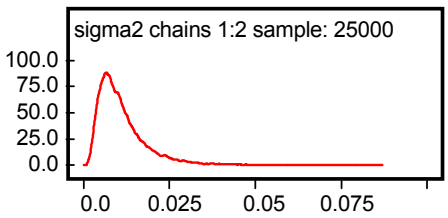

RESIDSPR[32] chains 1:2 sample: 2500
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

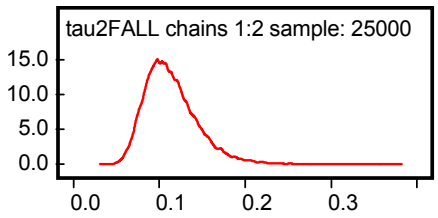

RESIDSPR[33] chains 1:2 sample: 2500
2.0
1.5
1.0
0.5
0.0
-2.0
-1.0
0.0

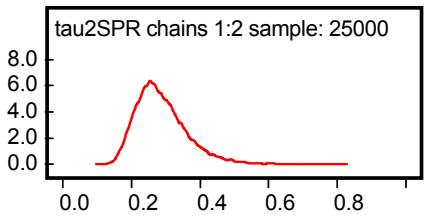

qFALL chains 1:2 sample: 25000
1500.0
1.00E+3
500.0
0.0
0.0
0.002
0.004


qSPR chains 1:2 sample: 25000
800.0
600.0
400.0
200.0
0.0
0.0
0.002
0.004
0.006


r chains 1:2 sample: 25000
30.0
20.0
10.0
0.0
0.0
0.2
0.4


sigma2 chains 1:2 sample: 25000
100.0
75.0
50.0
25.0
0.0
0.0
0.025
0.05
0.075


tau2FALL chains 1:2 sample: 25000
15.0
10.0
5.0
0.0
0.0
0.1
0.2
0.3


tau2SPR chains 1:2 sample: 25000
8.0
6.0
4.0
2.0
0.0
0.0
0.2
0.4
0.6
0.8