

MIPP Update

Holger Meyer
Fermilab All Experimenters' Meeting
3/14/05

- Cryo-target
- Statistics
- Detector and beam

Cryo-target vacuum woes - solved

- The MIPP cryo-target was run cold with LH_2 from 4 March to 7 March.
 - Evidence of a vacuum leak was seen in several indicators (heater power and vacuum quality during cool-down were most notable)
- The existence of a vacuum leak was confirmed on monday, 3/7
 - Vacuum spoiled a little when target flask was emptied (i.e. warmed up).
- The target system was warmed up and data on the empty target was taken.
 - Vacuum spoiled a lot when the refrigerator was warmed up.
 - The leak was on a flexible line between the roughing pump and the refrigerator. Only very little frozen air was on the target flask.
- The leak was fixed and a bad pump (still pumping, but lot of noise, vibration) was replaced.
- The target was cooled down again on thursday afternoon, was working well since then and did not show any sign of trouble when it was emptied this morning. We will keep the target cold, alternate full and empty runs.

Cryo-target

Historical Data

03/11/2005

Note: To select a different day "click" on calendar buttons.

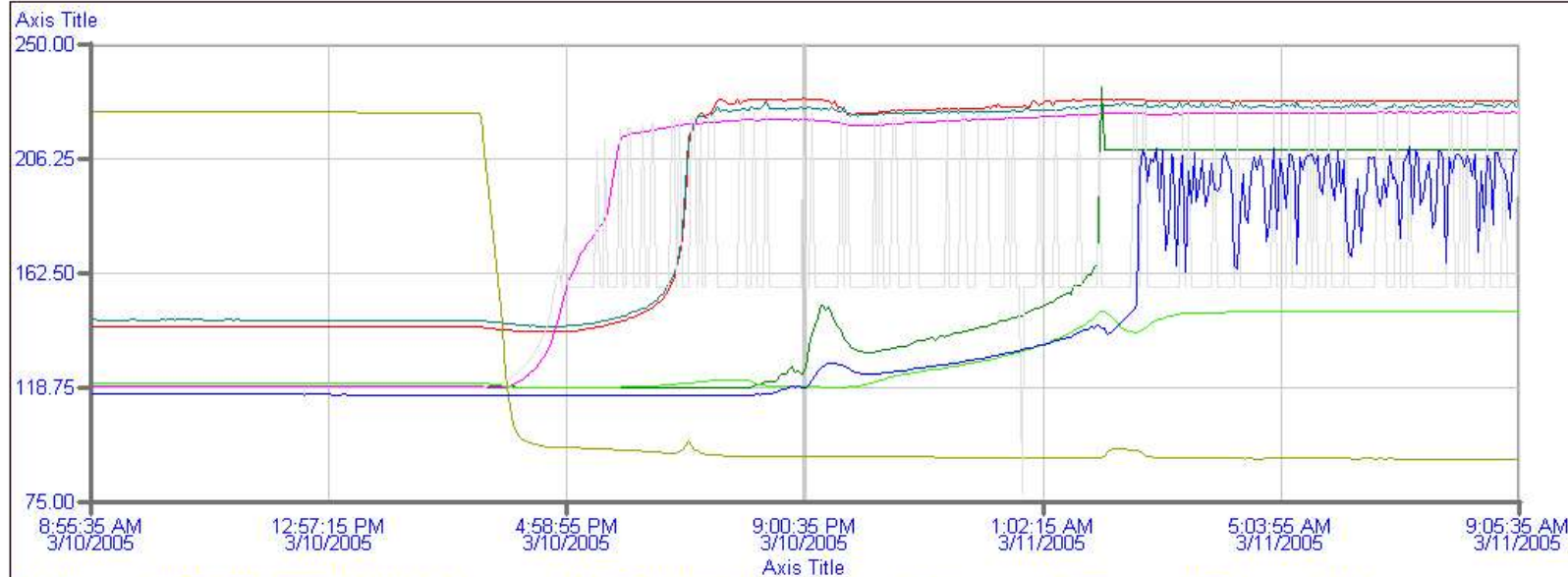
March		2005				
Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9

RESET ZOOM

CLOSE

Main Page

PRINT



Axis Title	Unit	141.56	115.81	211.17	
118.78 Hist.PIXEL06.E907_H2_LL2R_01_H.	Mylar Flask, Upper (A)	Ohms	141.56	115.81	211.17
125.35 Hist.PIXEL06.E907_H2_LL2R_02_H.	Mylar Flask, Lower (B)	Ohms	151.09	118.83	233.81
273.62 Hist.PIXEL06.E907_H2_LL2R_03_H.	Refrig. Upper Reservoir (Ohms	226.02	158.99	273.71
268.64 Hist.PIXEL06.E907_H2_LL2R_04_H.	Refrig. Lower Reservoir (Ohms	225.85	161.70	272.26
221.47 Hist.PIXEL06.E907_H2_TE_04_H.F	(L)	Ohms	186.92	118.95	224.40
14.94 Hist.PIXEL06.E907_H2_TE_01_HE.	(J)	Ohms	47.41	14.26	128.24
186.04 Hist.PIXEL06.E907_H2_TE_02_HE.	(K)	Ohms	155.06	78.71	236.48
119.26 Hist.PIXEL06.E907_H2_TE_03_HE.	(M)	Ohms	129.86	118.70	148.35
<No Data> Hist.PIXEL06.E907_H2_TE_01_W.F	Compressor Chiller RTD	C	50.00	0.00	100.00
<No Data> Hist.PIXEL06.E907_H2_PT_03_H.F	VPT Refer Temp	psia	50.00	0.00	100.00
<No Data> Hist.PIXEL06.E907_H2_FT_01_H.F	H2 Flow from H2 Cylinders	psig	50.00	0.00	100.00
<No Data> Hist.PIXEL06.E907_H2_PT_02_H.F	H2 Refer Supply	psig	50.00	0.00	100.00

Beam Cerenkov 1

E907_Rack_Alarms.grf

E907 Rack Alarms

Rack Alarm

Magic Mixer Alarm

P10 Mixer Alarm

CKOV Alarm

DC/PWC Alarm

H2 Target

To Silence Alarm Push Button

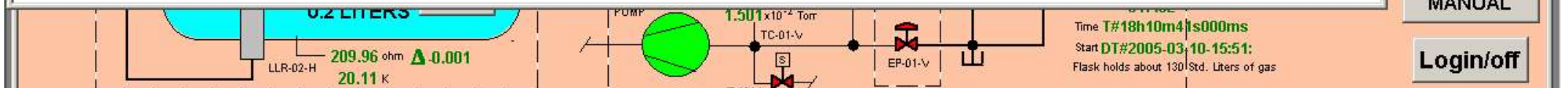
TEMP PLOT (OHMS)

VAC PLOT

PRESS PLOT

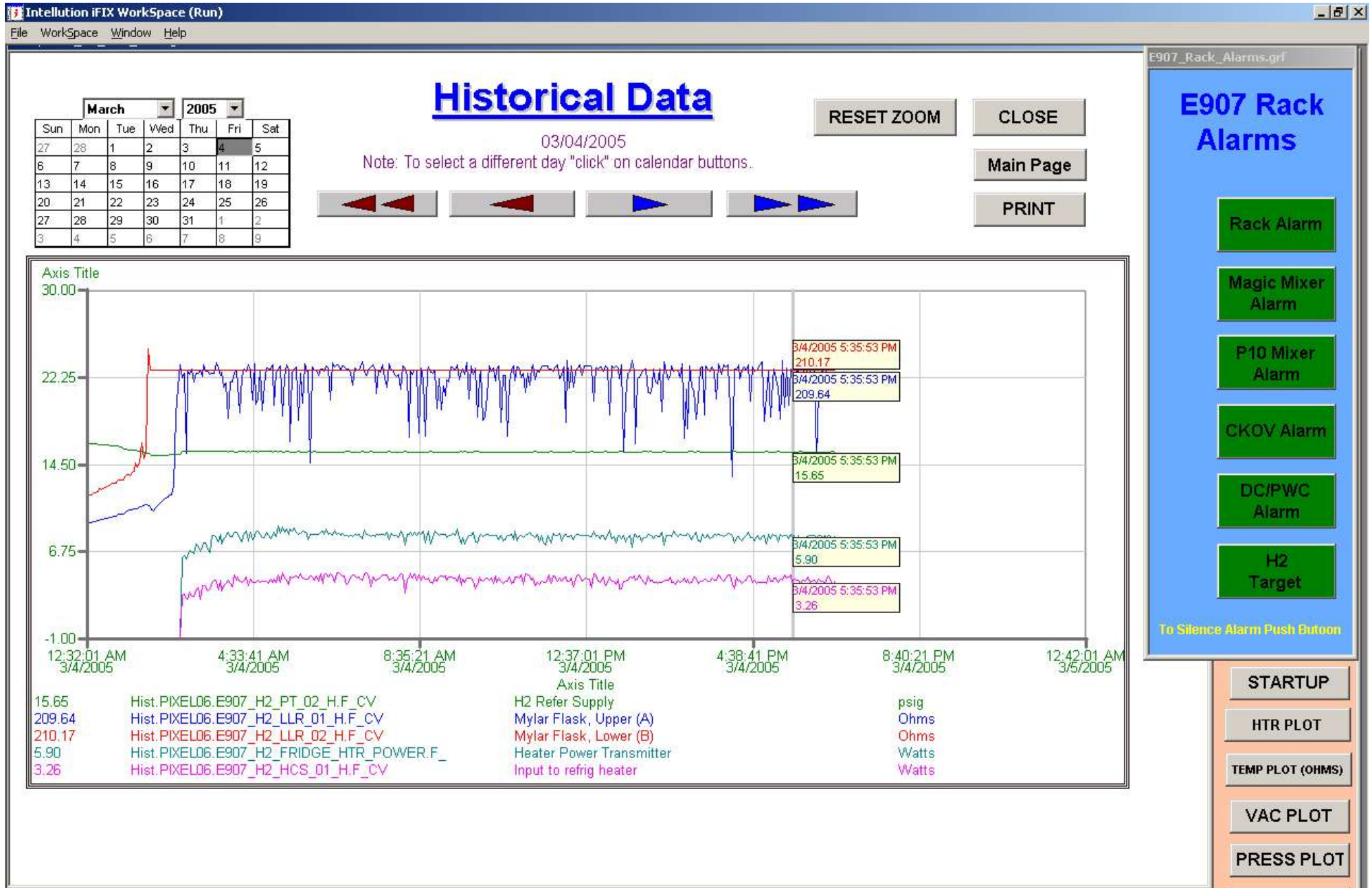
MANUAL

Login/off



Time T#18h10m41s000ms
Start DT#2005-03-10-15:51:
Flask holds about 130 Std. Liters of gas

Cryo-target



E907_Rack_Alarms.grf

E907 Rack Alarms

Rack Alarm

Magic Mixer Alarm

P10 Mixer Alarm

CKOV Alarm

DC/PWC Alarm

H2 Target

To Silence Alarm Push Button

STARTUP

HTR PLOT

TEMP PLOT (OHMS)

VAC PLOT

PRESS PLOT

MANUAL

4

Login/off



MIPP Statistics

- Data on full (59 hours this week) /empty (36 hours this week) cryo-target (H_2) at +50GeV/c:
 - This is ca. 9.5 spills per minute while taking data
 - 43k spills (2.7k empty) on H_2 total, 23.7k spills (1.7k empty) this week
 - 12.2k spills (0.8k empty) on empty target this week
 - 520k interactions on H_2 , 183k on empty target total
 - Evenly split among incident π , K, p

MIPP detector & beam status

- Overall the detector was working well.
- TPC had problems initializing a few times.
- TPC gating grid noise was studied. This may lead to better dE/dx resolution if we can lower thresholds.
- Beam was good.
The cryo-target needs smaller beam spot than the solid targets.
 - Beam studies for beam size on target, backgrounds, swic/target/beam-veto alignment.

MIPP summary

- Cryo-target was fixed last week and is now working reliably.
- The detector was performing well.
- Beam was good.