



P.P. Shirshov Institute of Oceanology

Russian Academy of Sciences

“Large scale variability of Atlantic derived waters

within the St. Anna Trough region.

More historical observed data - new peculiarities.”

Sergey V. Pisarev

Head of Polar Oceanography Group, Ph.D

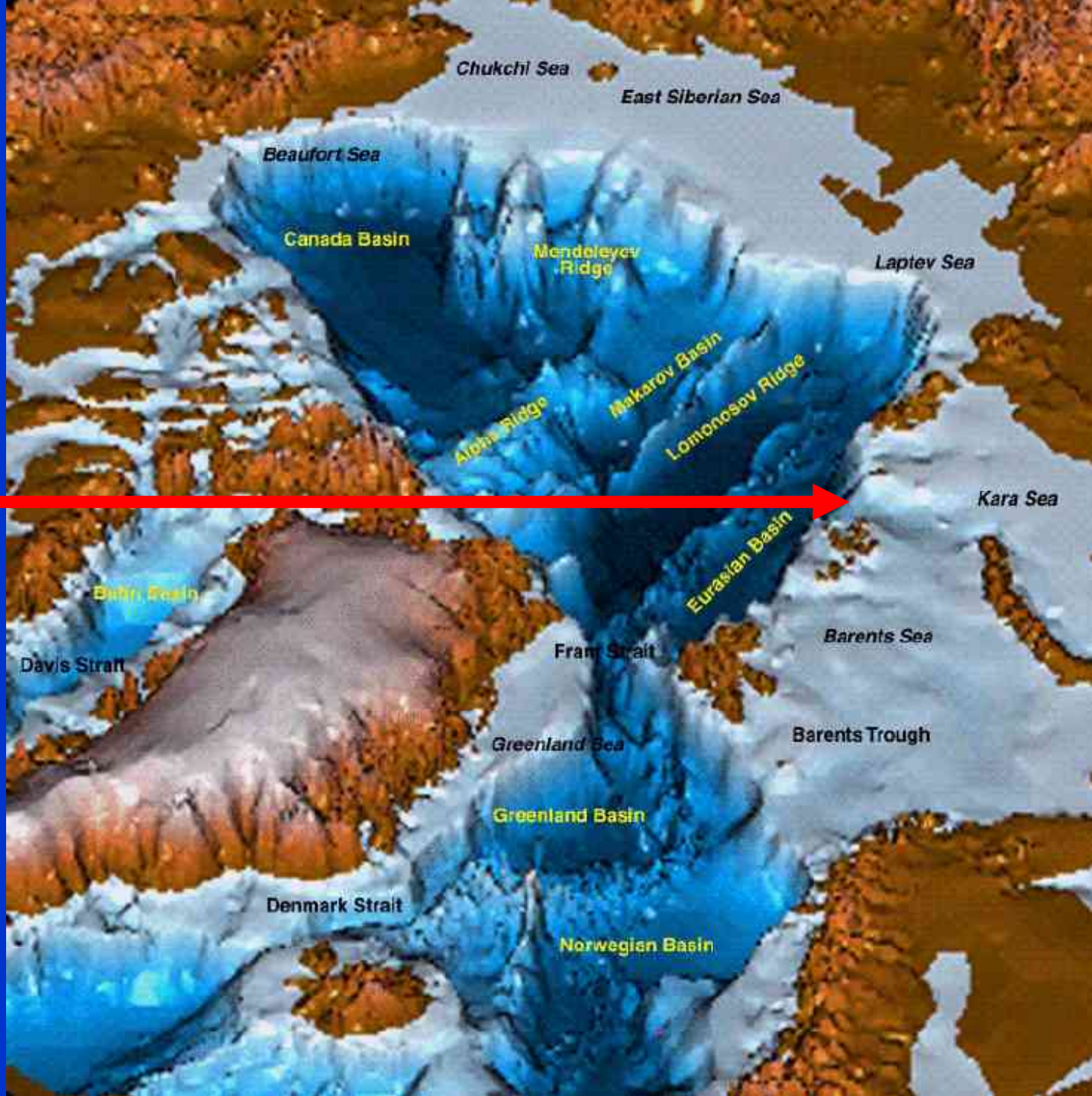
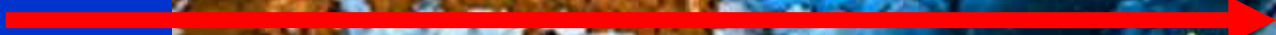
January 25 2008, 11:00 - 12:00 ETZ

SSMC-3, Room #4817, NODC Seminar.



Where St. Anna Trough?

Here



EWG Atlas,
1998



КАРТА РАЙОНА
ЭКСПЕДИЦИИ
Г. Л. БРУСИЛОВА
В 1912-1914 ГОДАХ

И

СХЕМА МАРШРУТОВ
ГРУППЫ АЛЬБАНОВА
ПО ОСТРОВАМ ЗЕМЛИ
ФРАНЦА-ИОСИФА
В ИЮНЕ-ИЮЛЕ 1914 ГОДА



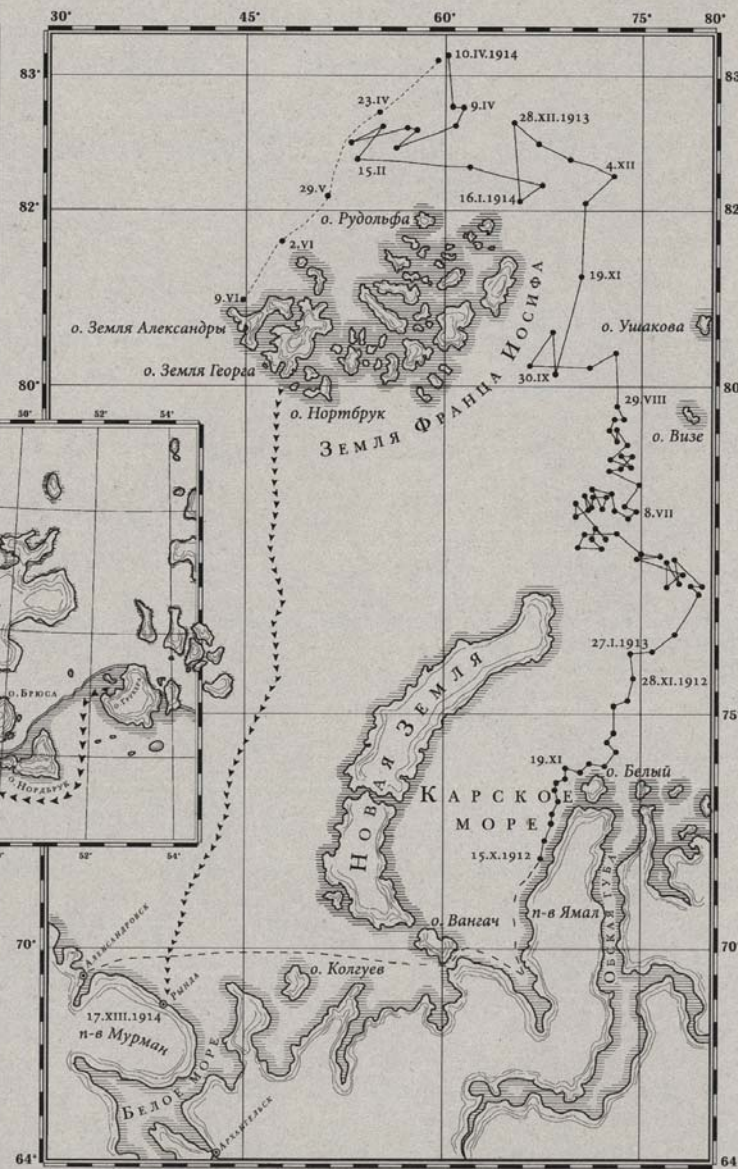
УСЛОВНЫЕ ОБОЗНАЧЕНИЯ

▶▶▶▶▶▶▶▶▶▶
Путь «Св. Фоки»

—————
Путь на каяках

.....
Путь пешком

⊕ Вероятное место
гибели четырех
участников пешего
перехода



УСЛОВНЫЕ ОБОЗНАЧЕНИЯ

.....
Путь «Св. Анны» под парами

—————
Дрейф «Св. Анны» со льдами

.....
Путь Альбанова на санях

▶▶▶▶▶▶▶▶▶▶
Путь «Св. Фоки»

Why was called St. Anna?

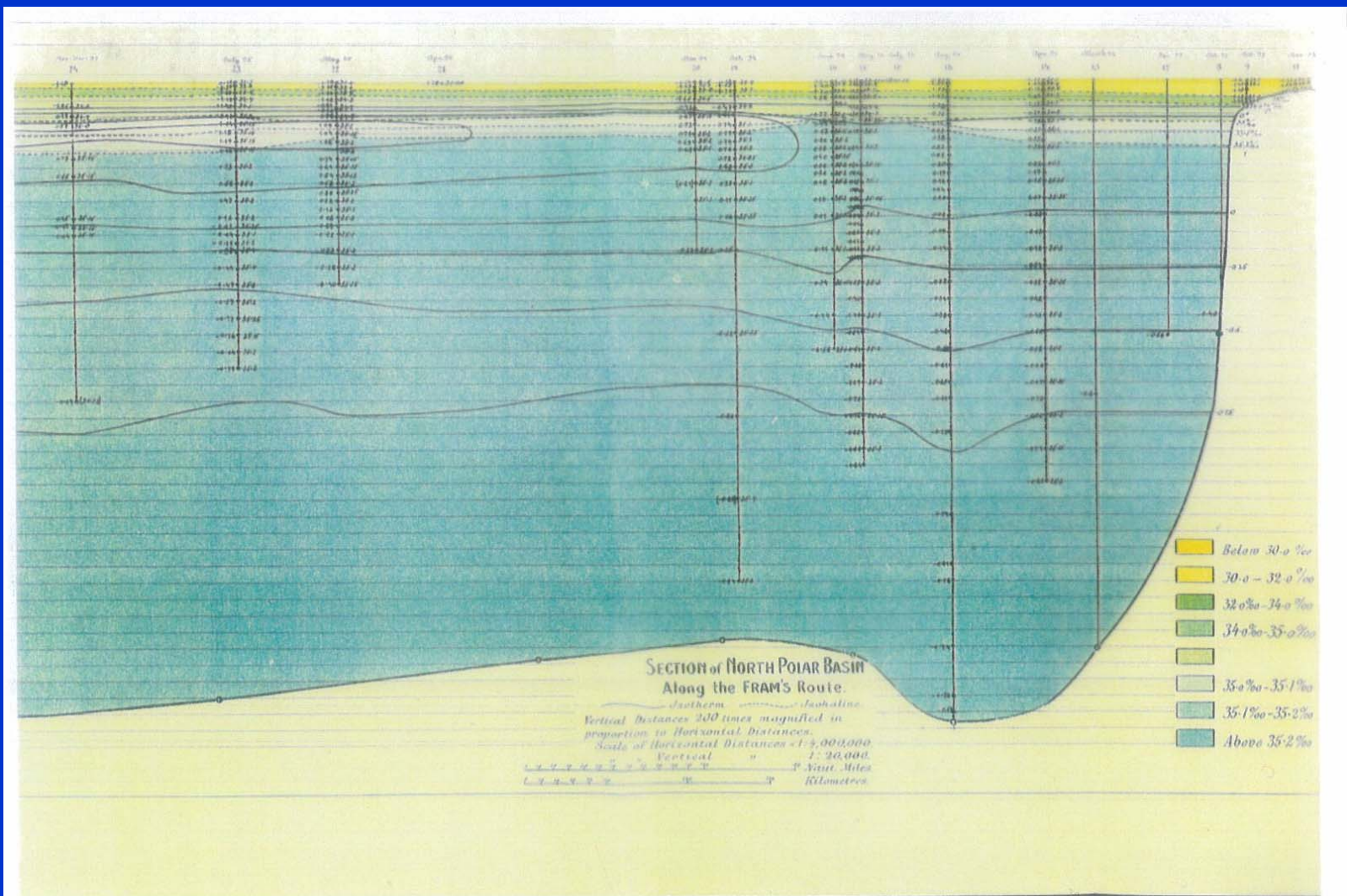
Drift of schooner
"Saint Anna"
"Святая Анна"

October 1912 –

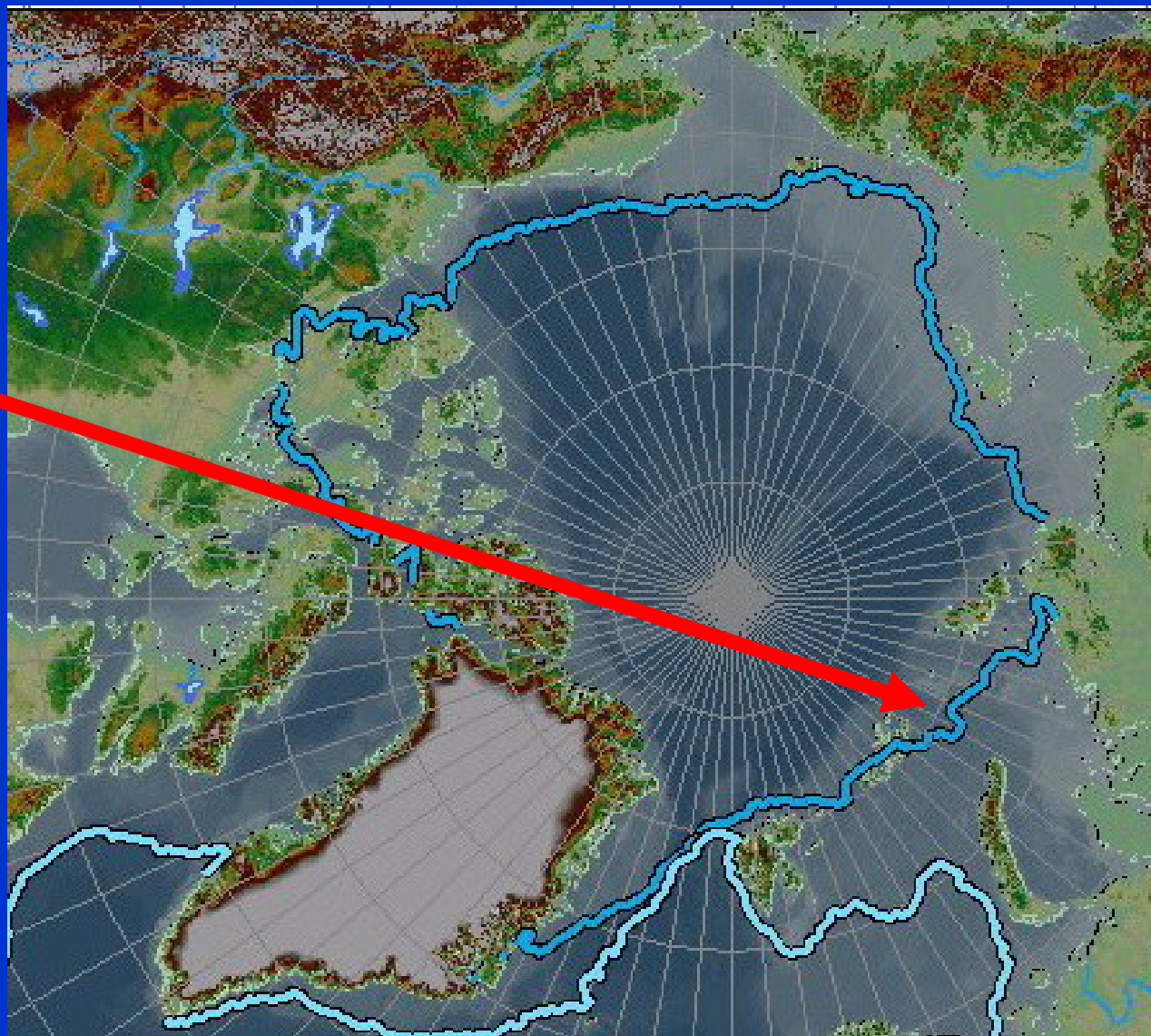
???? 1914 or
1915



Depth and salinity & temperature distributions of the Nansen Basin as observed from Fram 1893-1896



Nansen (1902)



Median margin of drifting Ice distribution in winter extreme (March – light blue) and summer extreme (September - deep blue) during 1979-2006.

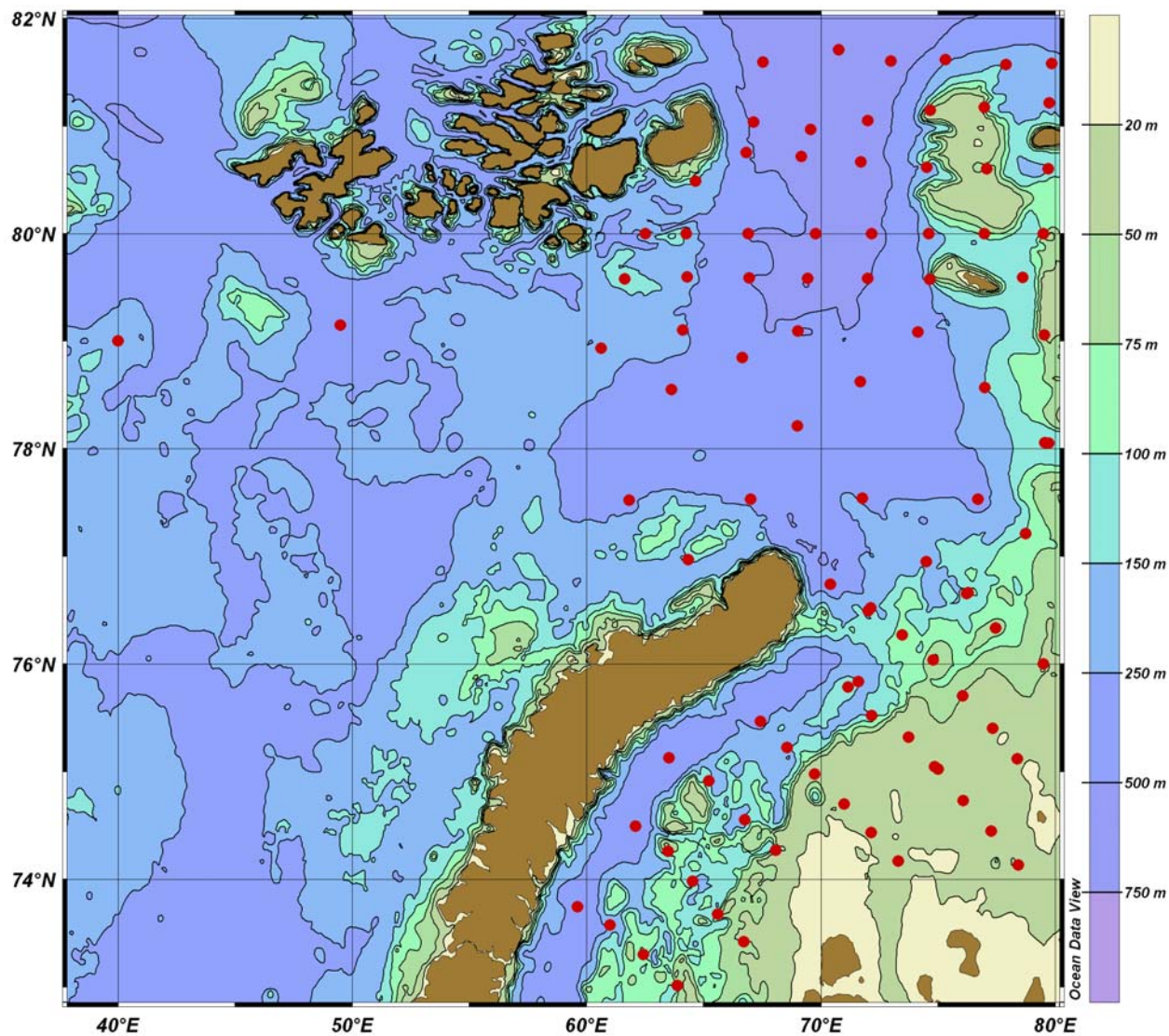


Russian seasonal (temperatures) St. Anna Trough region



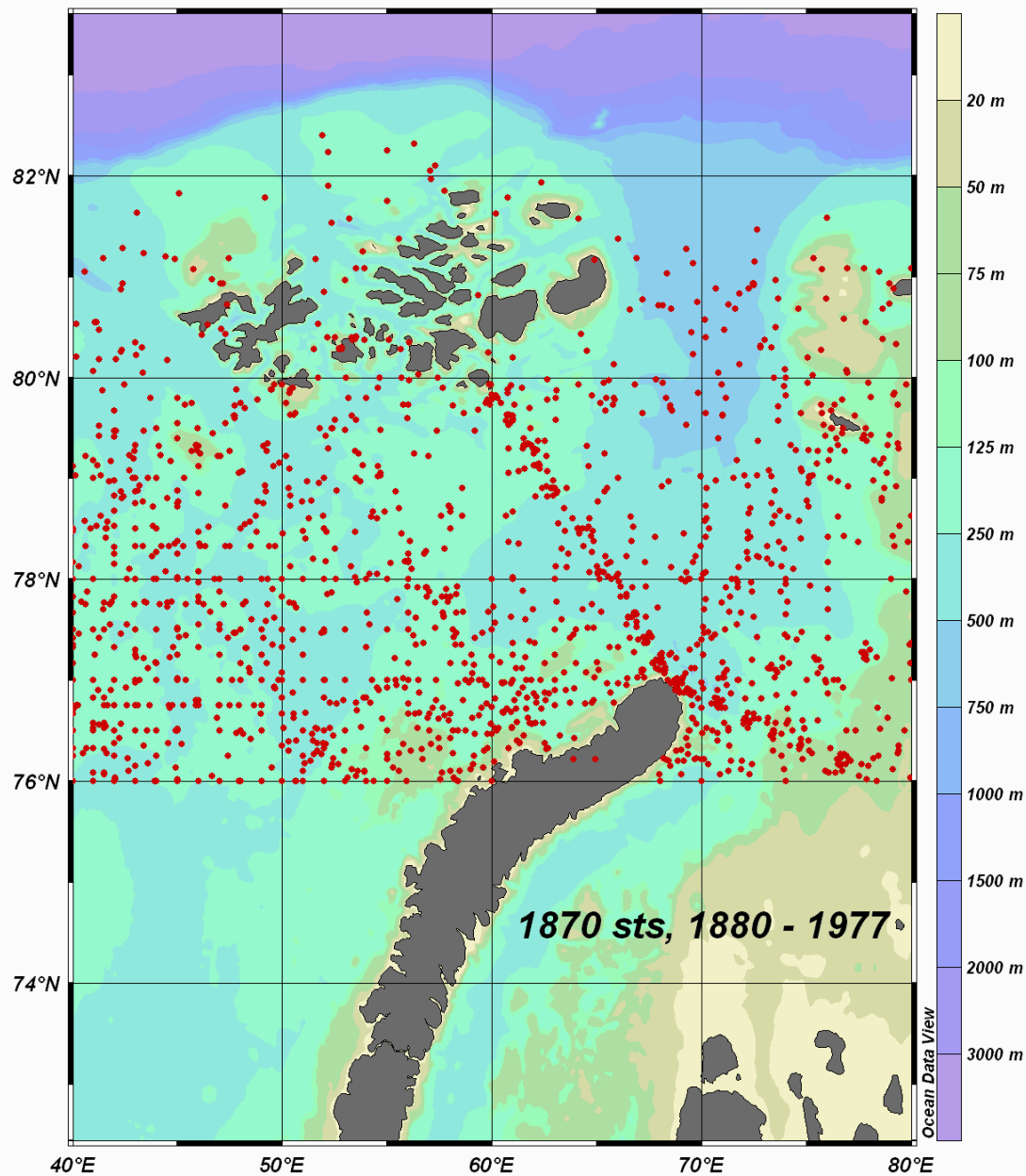


Ice breaker “North Wind” survey, July – August, 1965



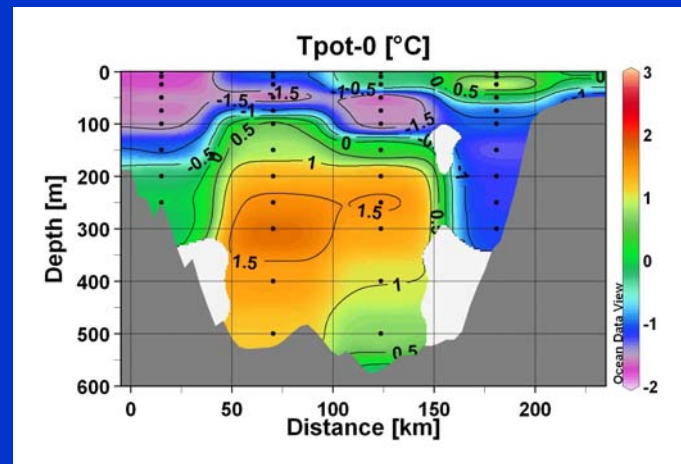
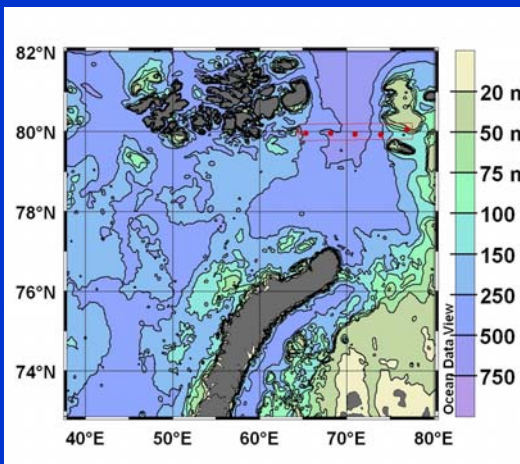
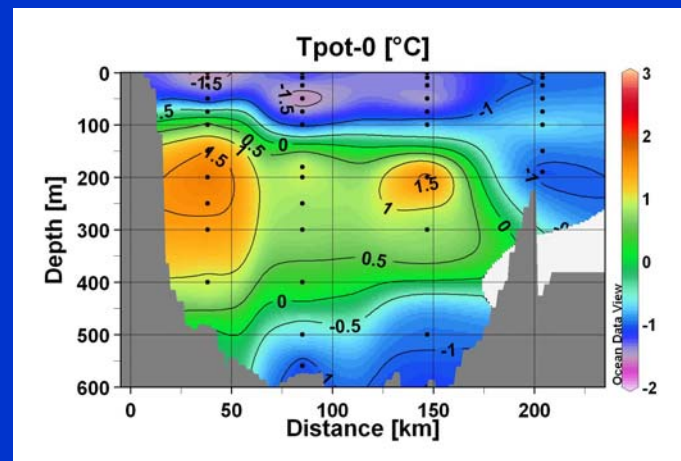
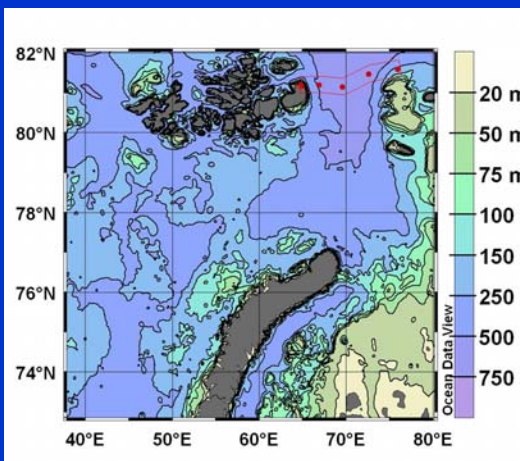


Distribution
of the observed
stations which
were used
for Gorshkov
Atlas (1980) creation
(presumable).



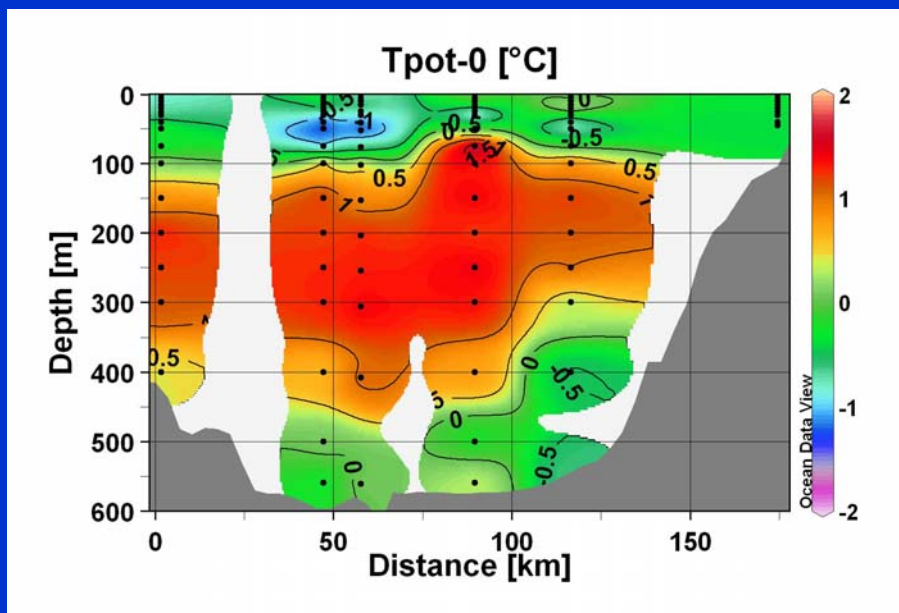
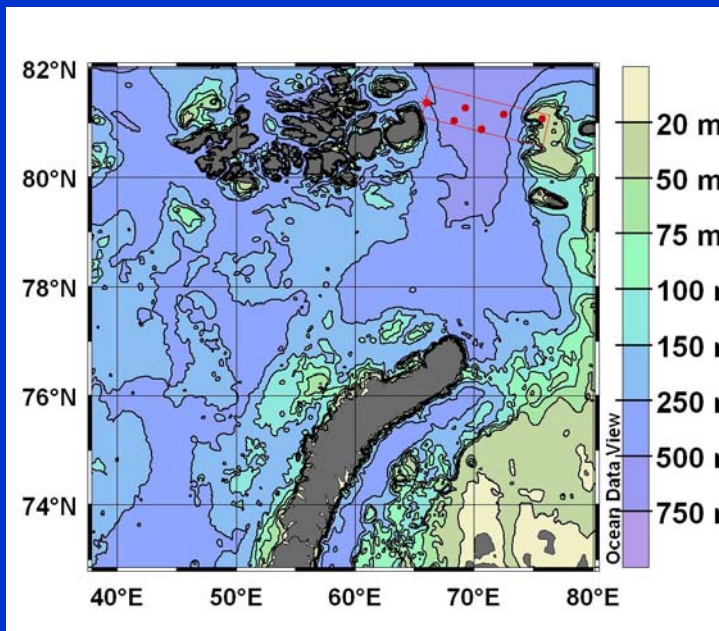


Sections of the “Sadko”, 1935



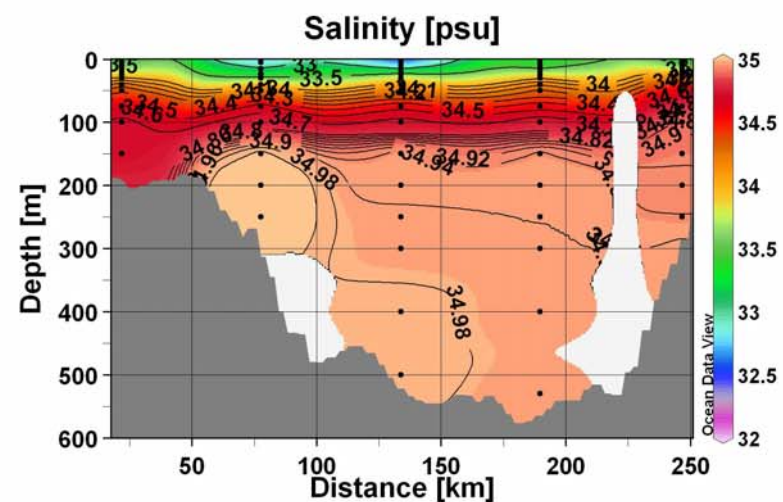
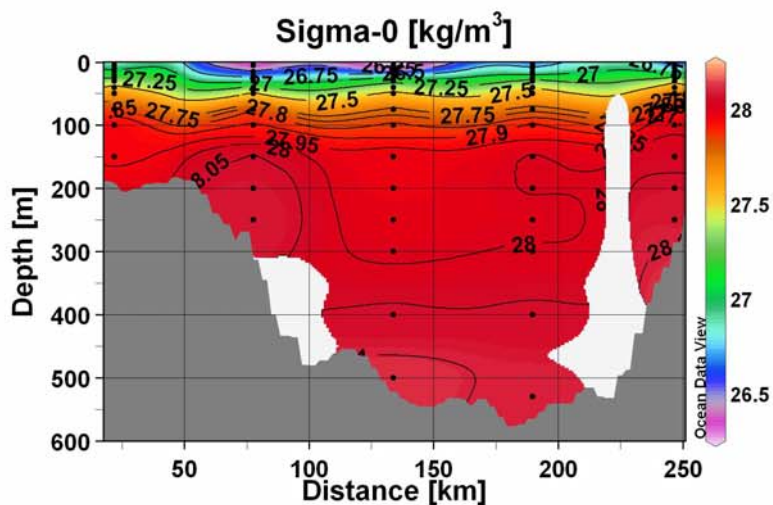
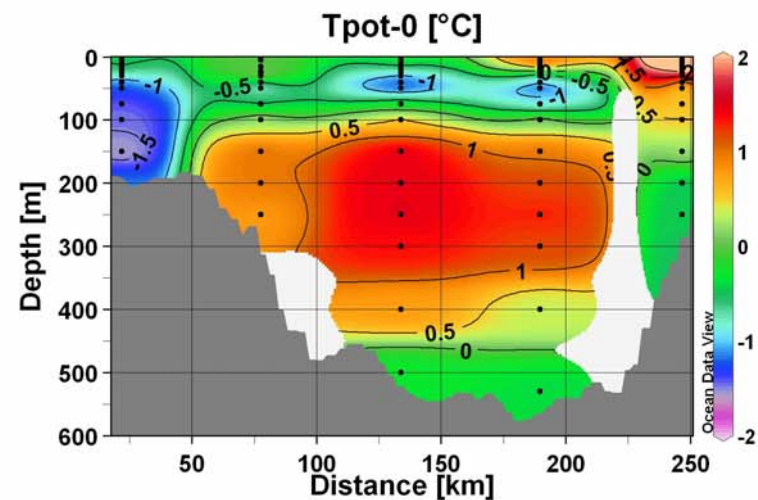
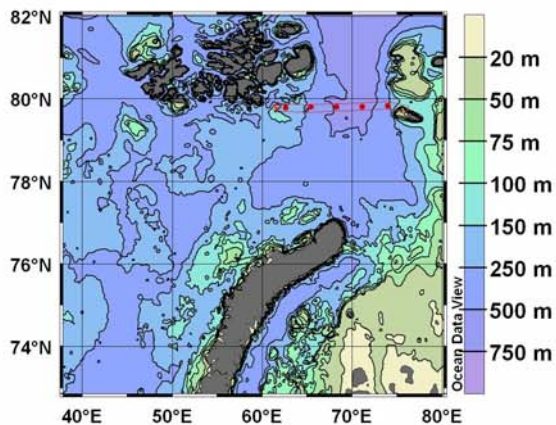


Section within the St. Anna Trough in 1955.





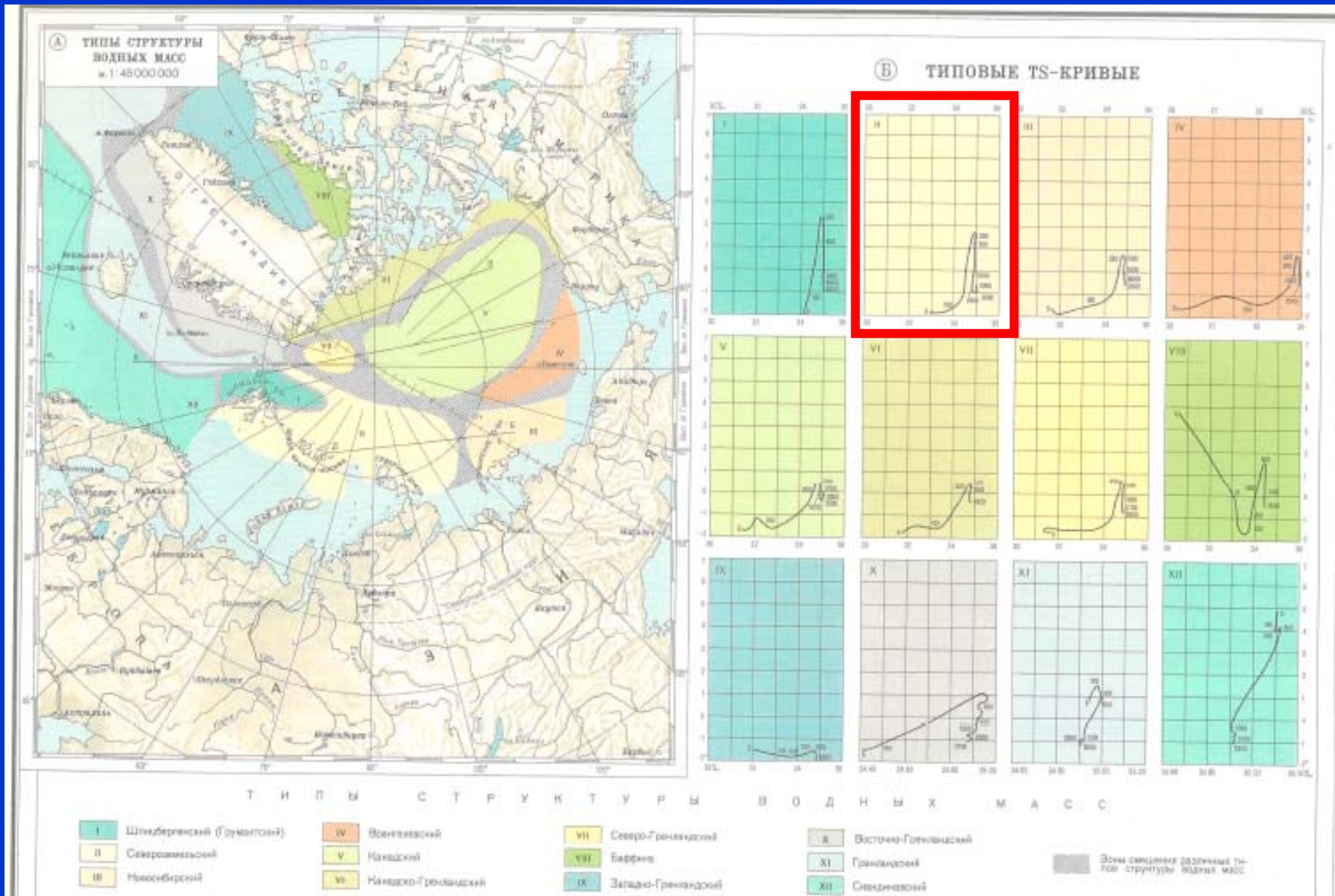
Section within the St. Anna Trough in 1955 -2.





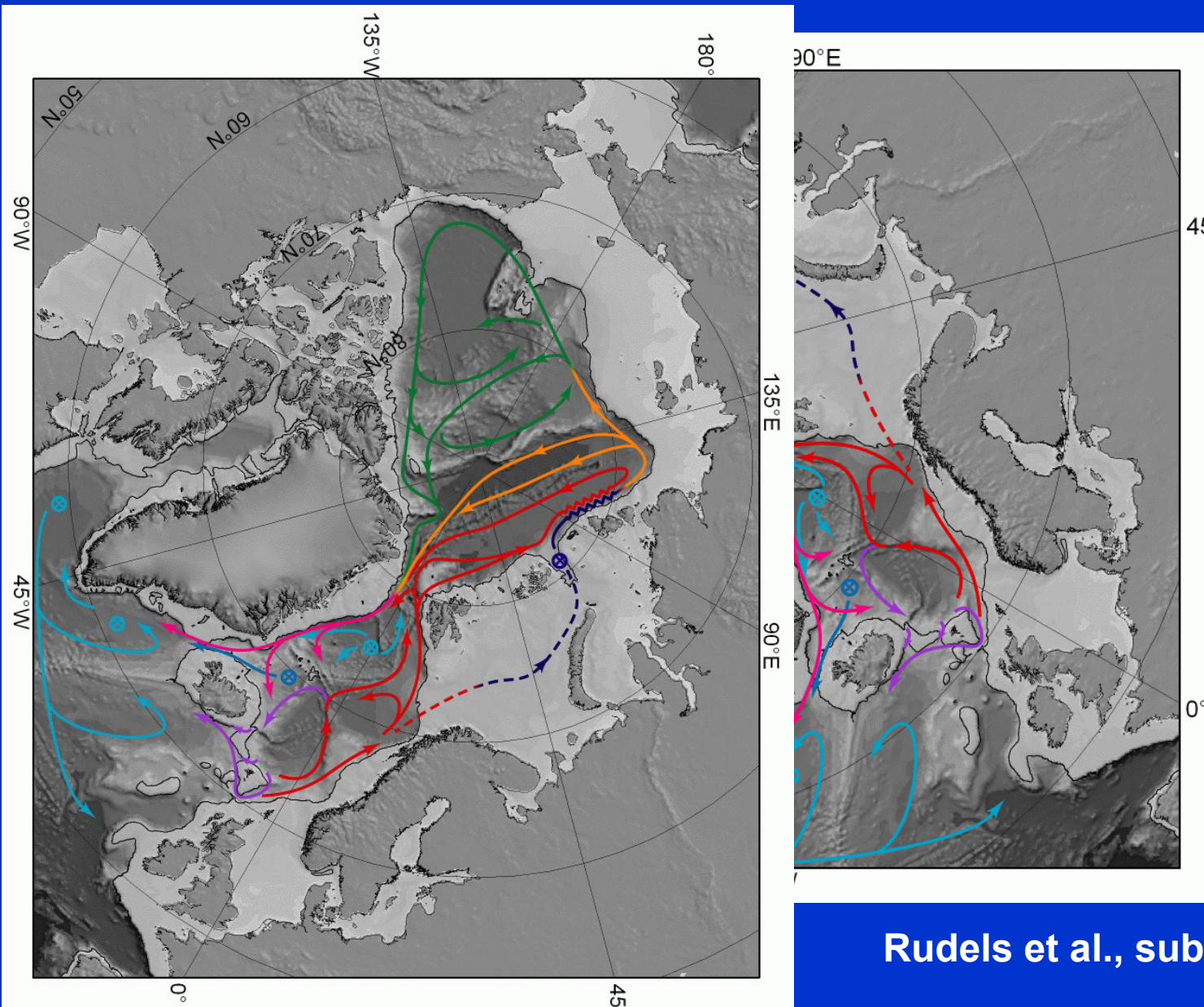
Water mass properties in different parts of the Arctic Mediterranean

Gorshkov 1980





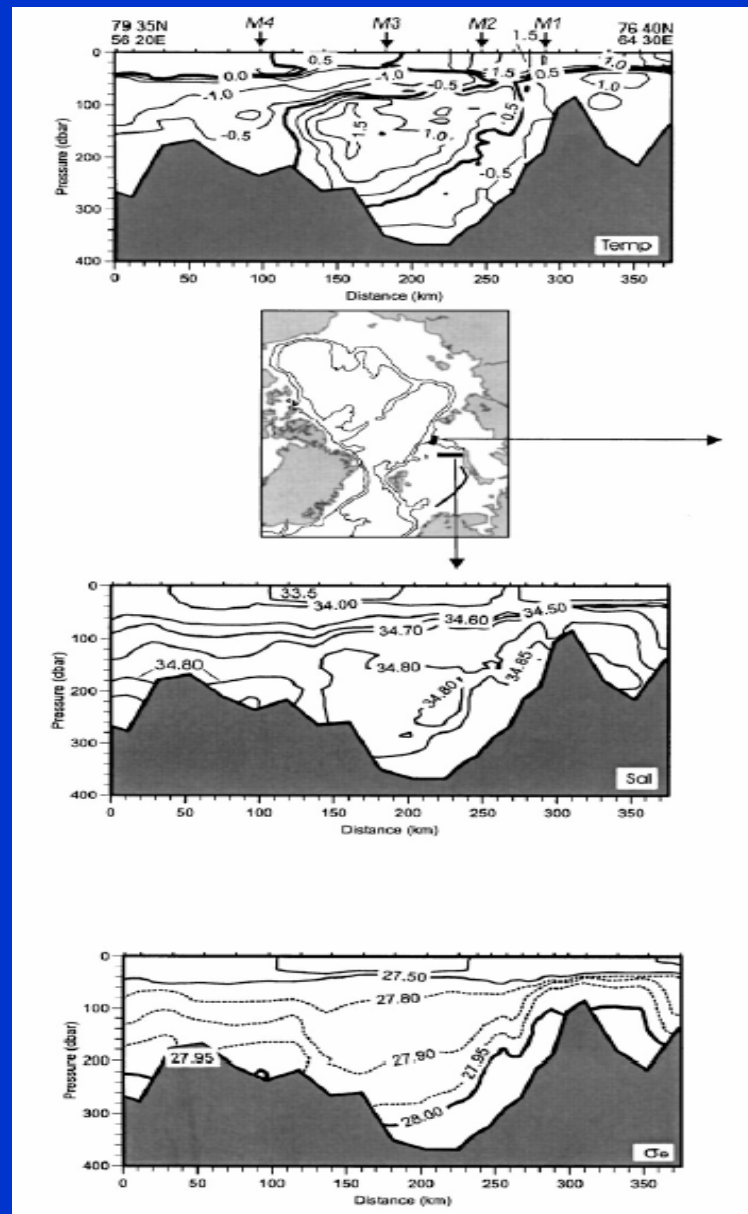
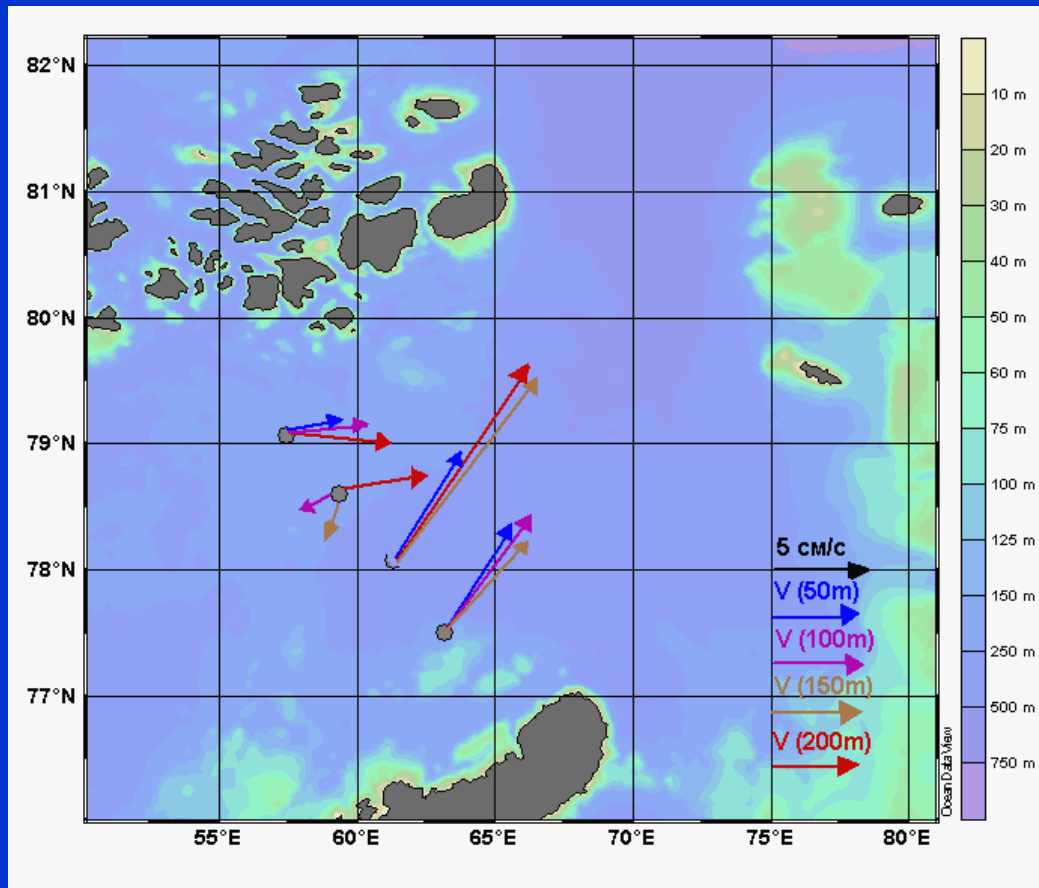
Circulation scheme for the intermediate waters in the Arctic Mediterranean



Rudels et al., submitted 2005

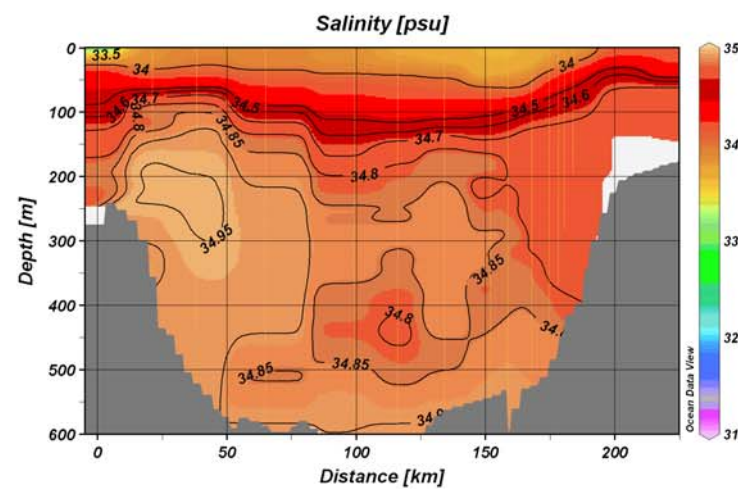
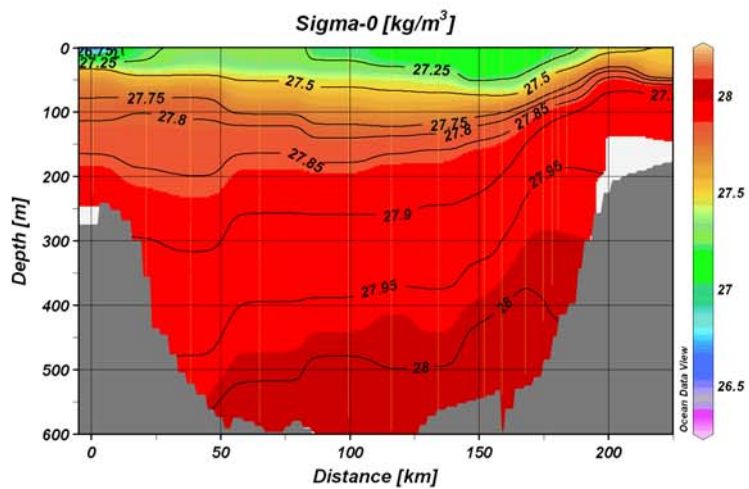
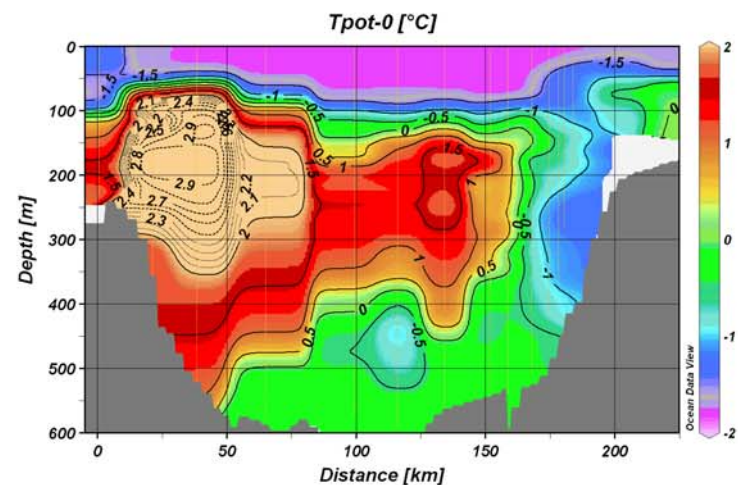
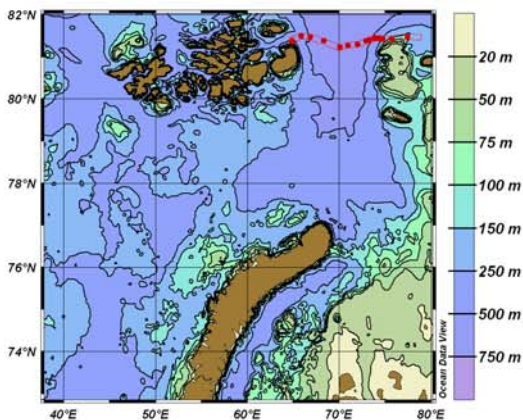


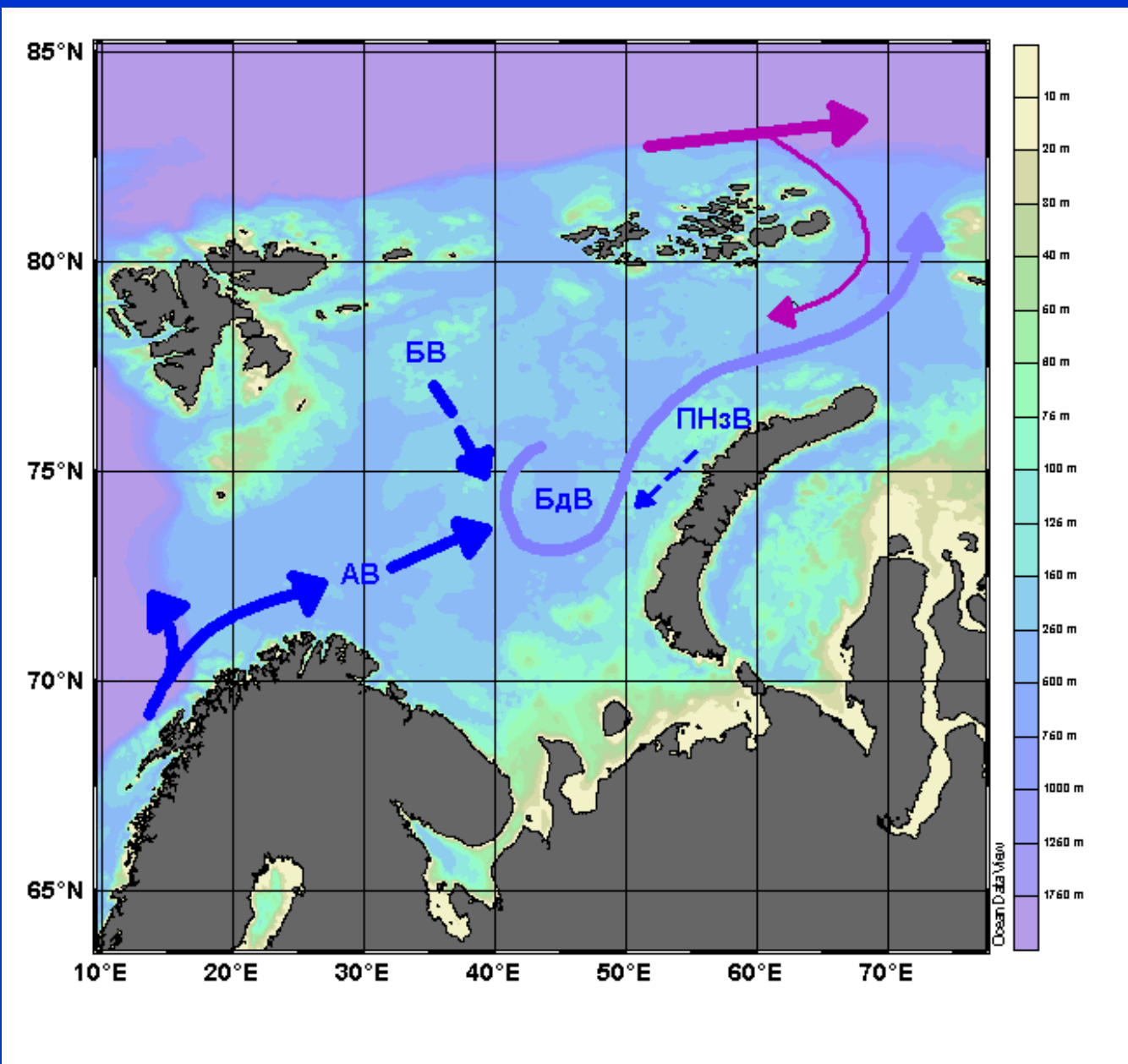
One year duration measurements with 4 (5) moorings (Loeng et al., 1993)

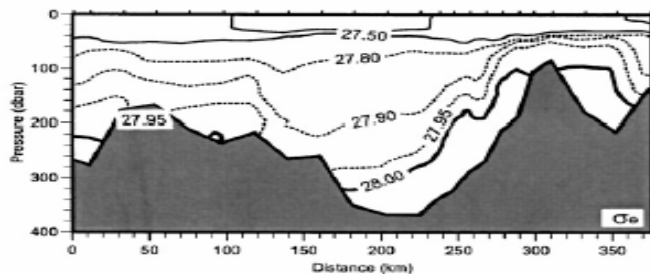
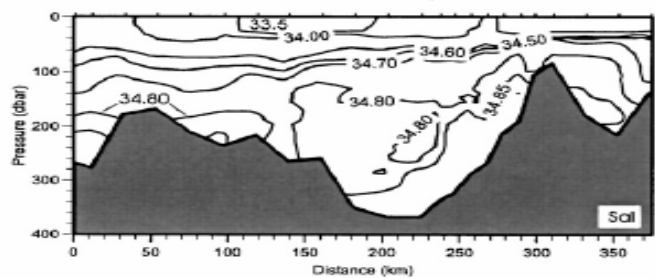
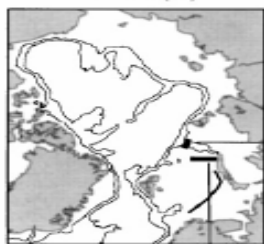
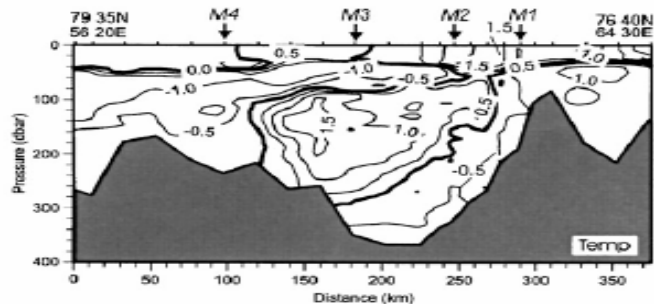




CTD section of "Polarstern", 1996.





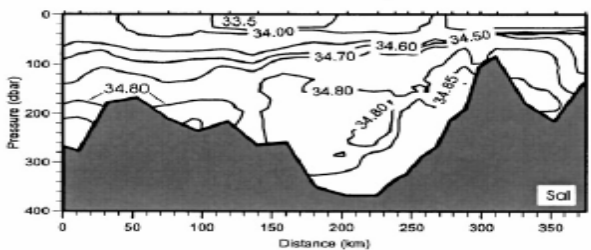
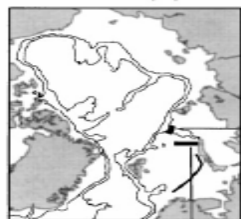
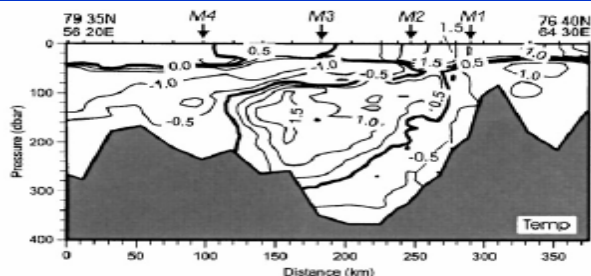


Citation from U. Schauer et.al, 2002

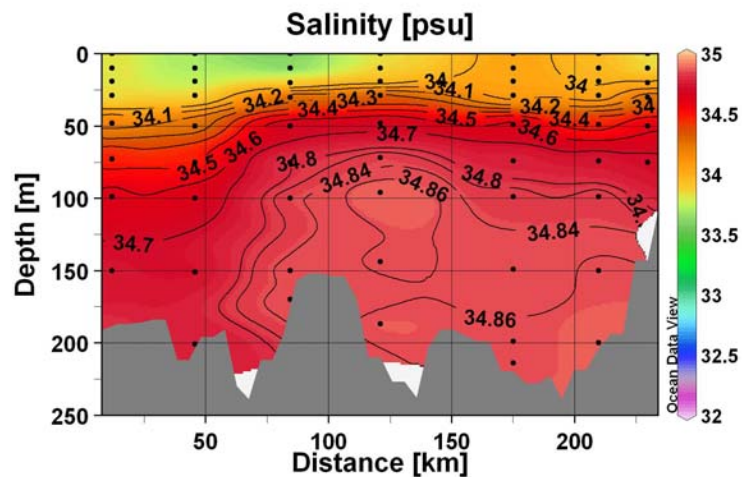
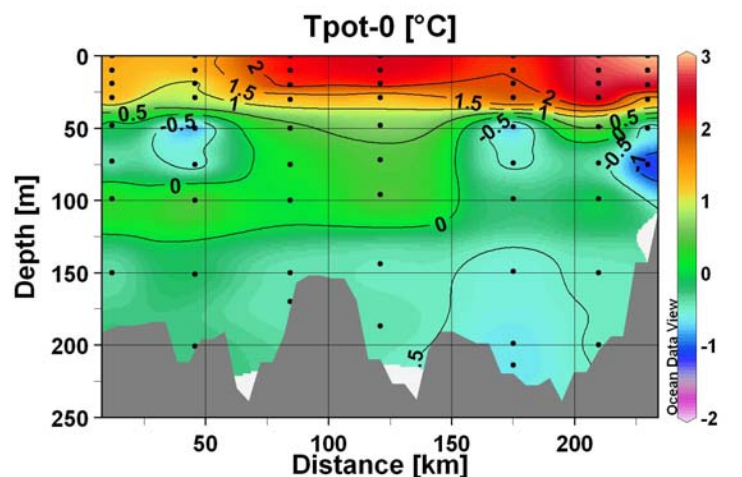
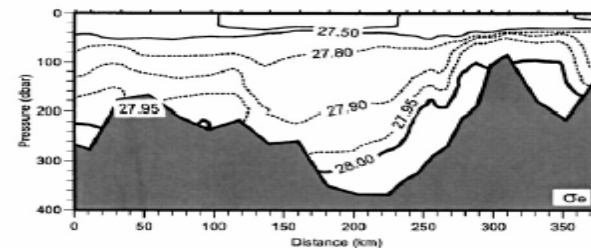
“This flow stems from the Fram Strait Atlantic water....It provides the warmest water in the northern Kara and northeastern Barents Sea, but due to the weak flow its importance as a heat source of the Barents Sea is only local”



...can be immediately continue ...so local, that this water not cross the sill 220 m in 1991 at least (see section below, 20-24 September 1991, #25).



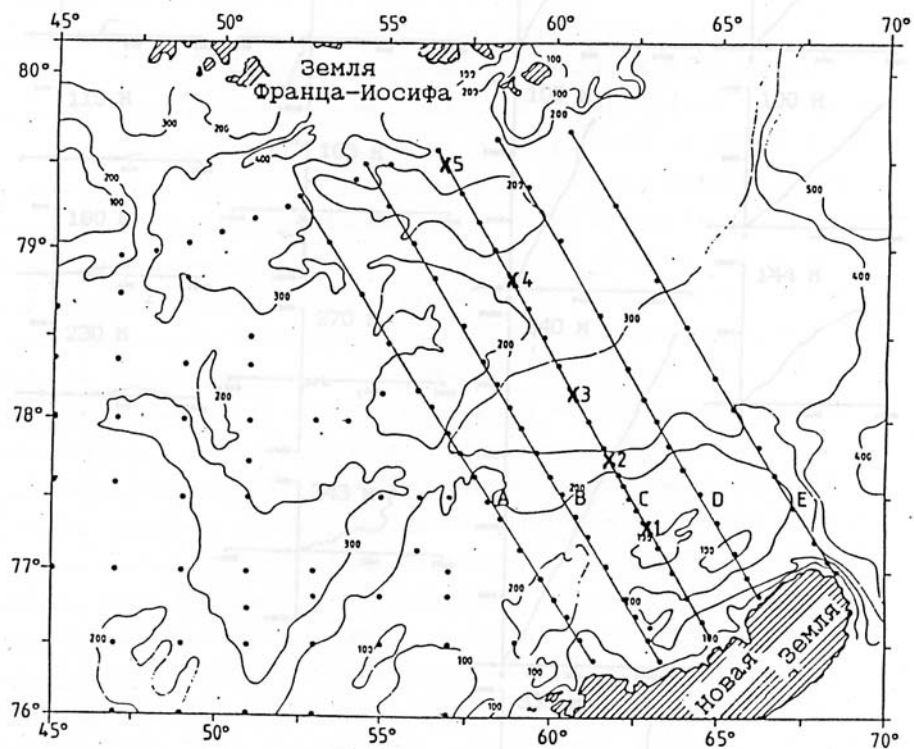
Depth [m]





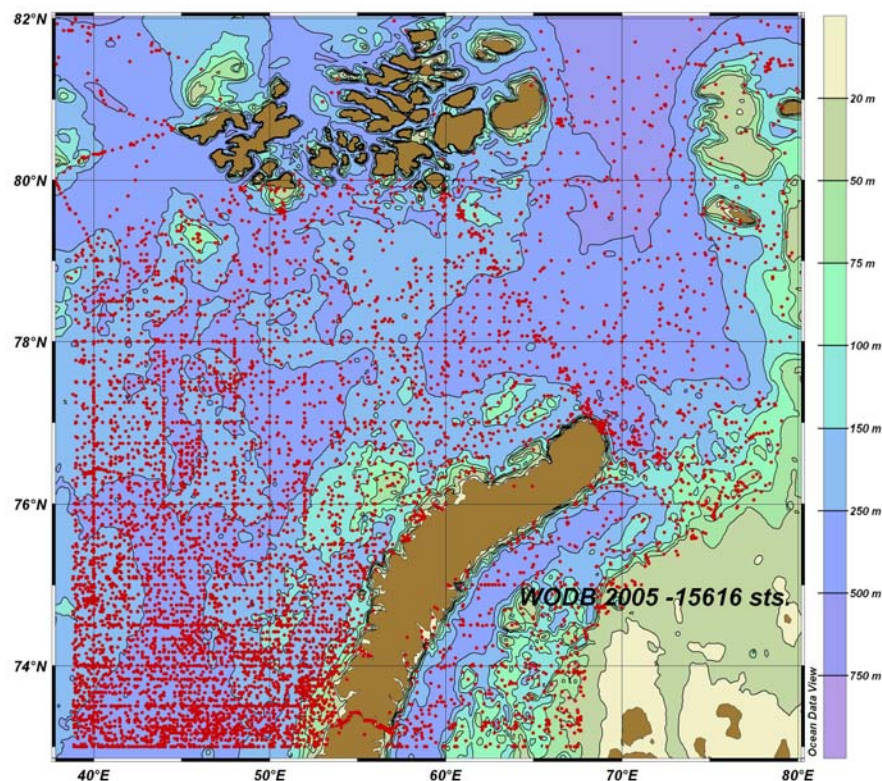
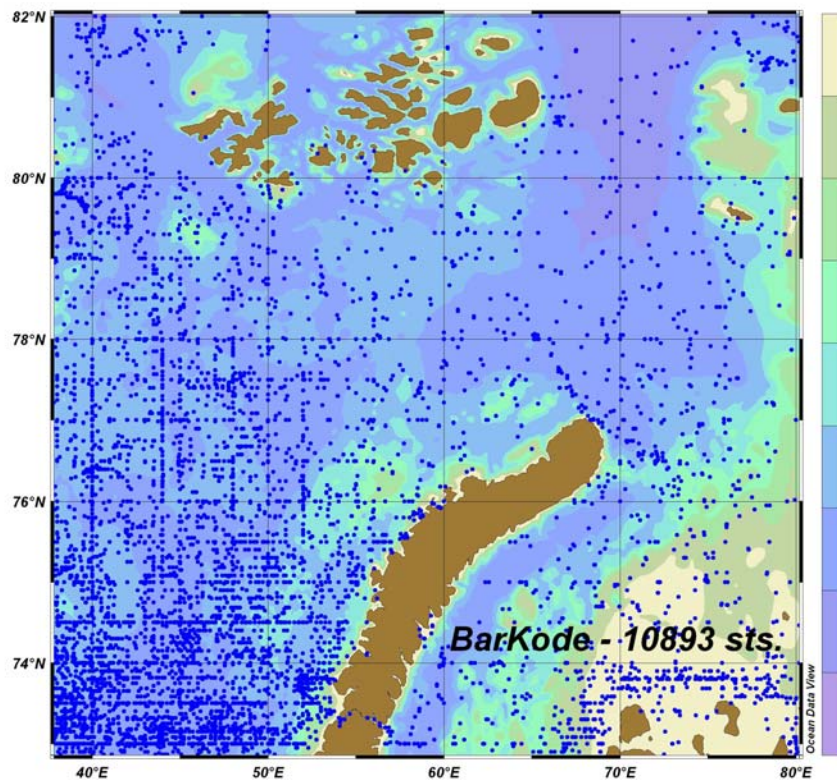
Sections, wish were carried out by "Johan Hjort" and "Ahill" in 1991.

Положение автономных буйковых станций (X1-X5), океанографических станций и разрезов (А-Е), выполненных МИ-0846 "Ахилл" и "Johan Hjort" в сентябре 1991 и 1992 гг.





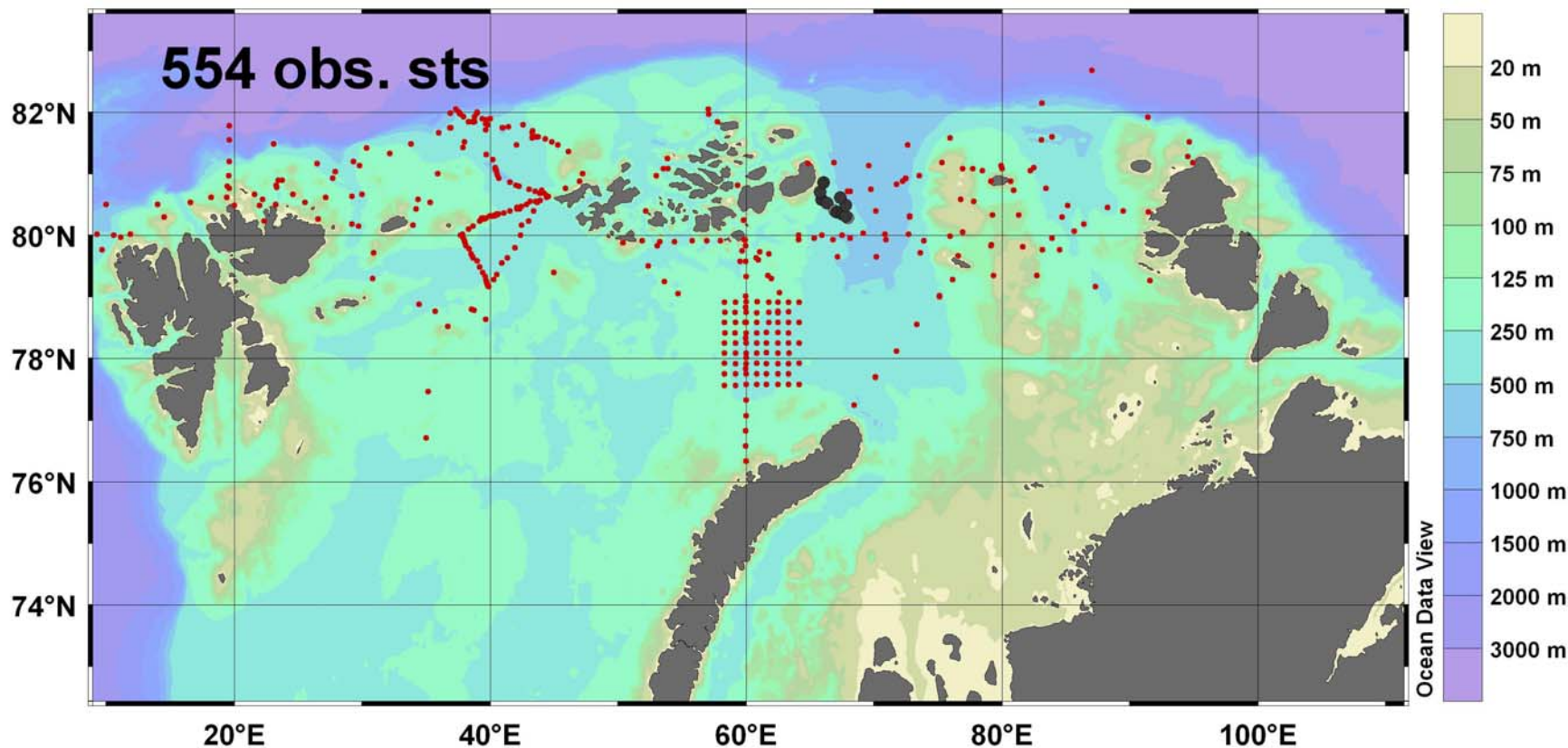
Real result of GODAR project





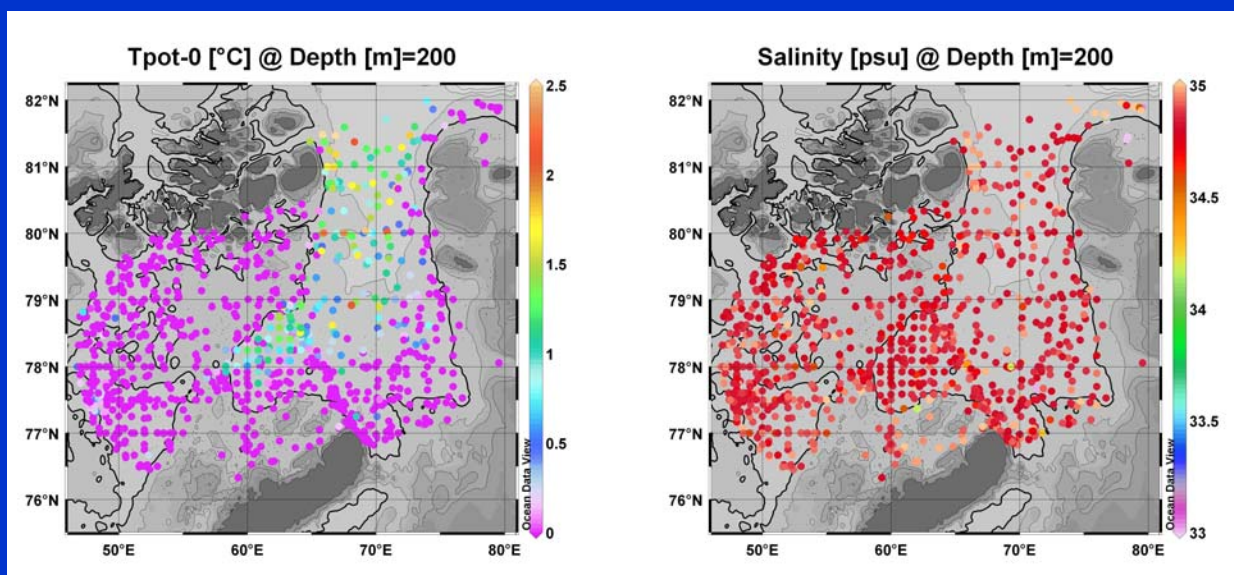
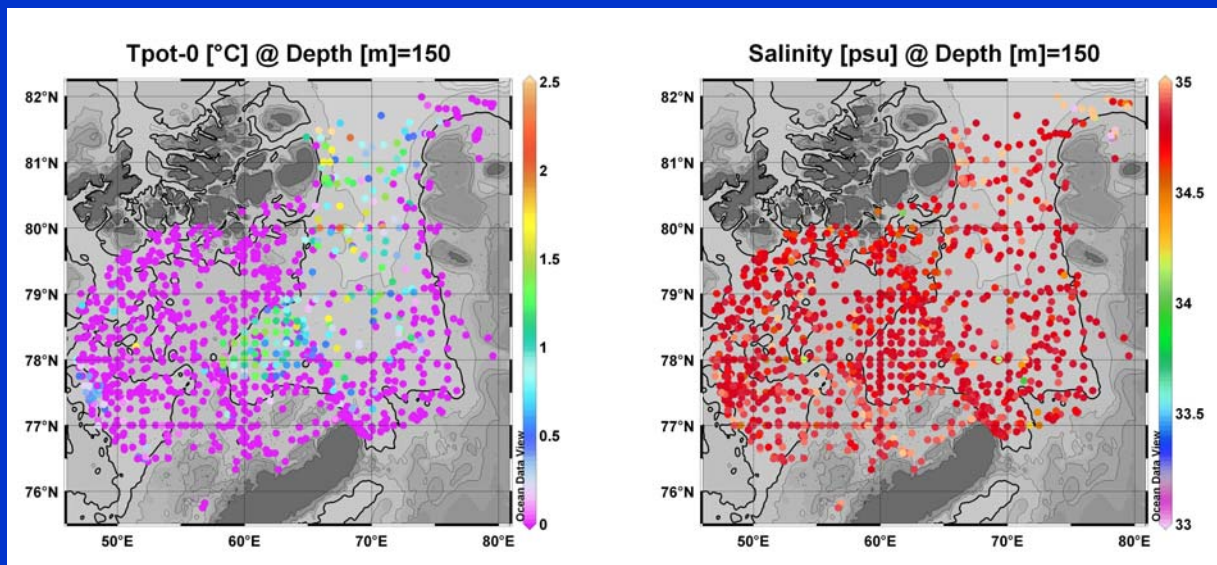
Addition to WODB 2005 from some Russian sources of data.

“Krasin” 1928 – 31 sts., “Litke” 1940 – 1 ts., “Nerpa” 1937, 1940 – 16 sts., “Persey” 1934 – 1 st., “Rusanov” 1936 – 3 sts., “Sadko” 1934-1936 – 112 sts., “Sedov” 1937 – 14 sts., “Sibiriakov” 1936 – 1 st., “Otto Shmidt” 1986 – 1 st., “Ak.Fedorov” 1998 – 172 sts, “Ak. Sergey Vavilov” 1997 – 94 sts.



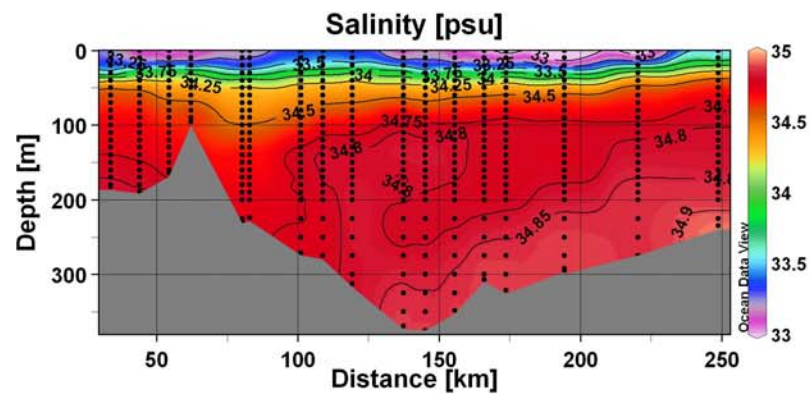
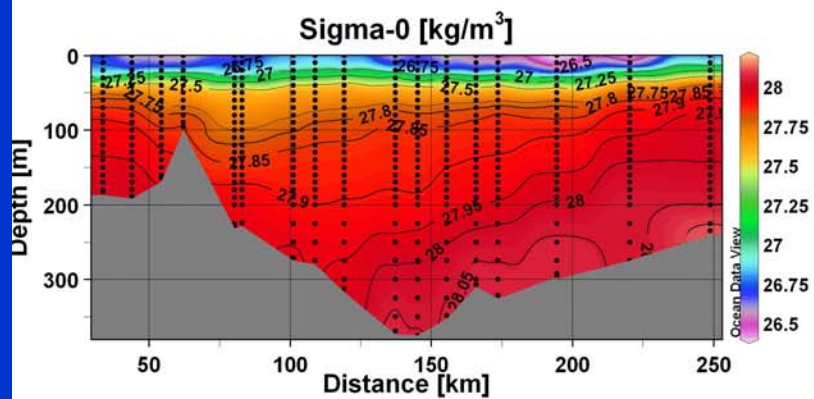
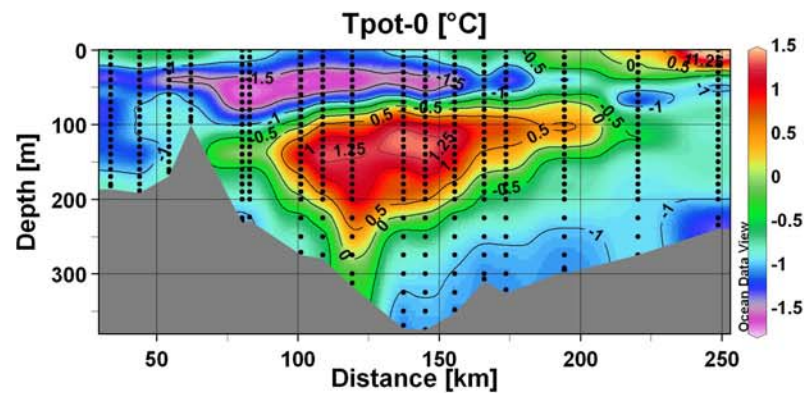
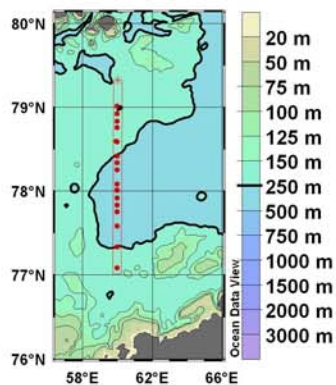


T and S on the levels 150 and 200 m within the whole region selected.



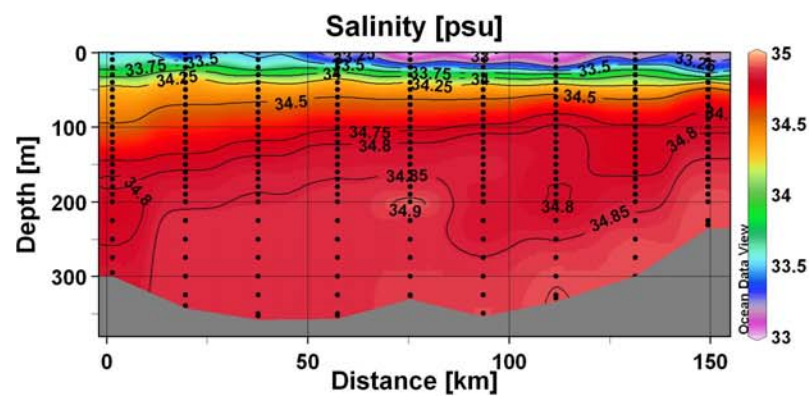
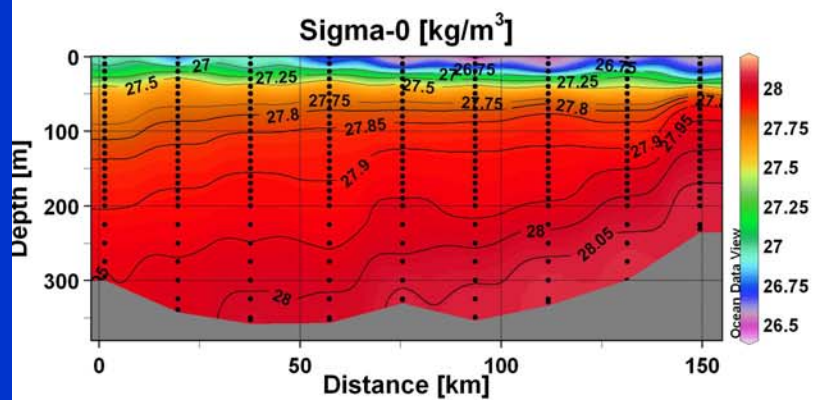
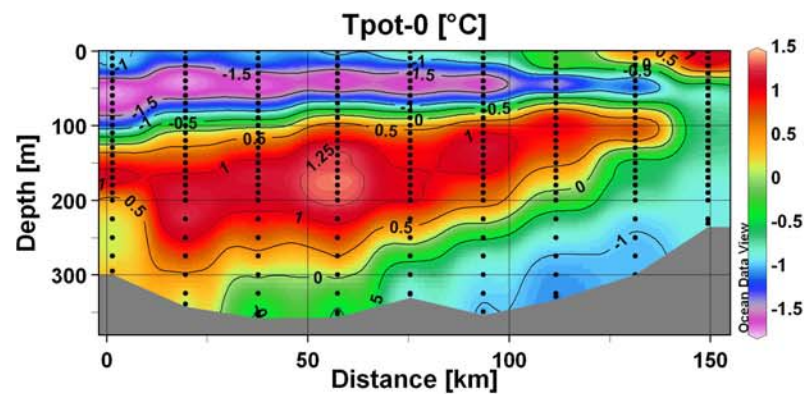
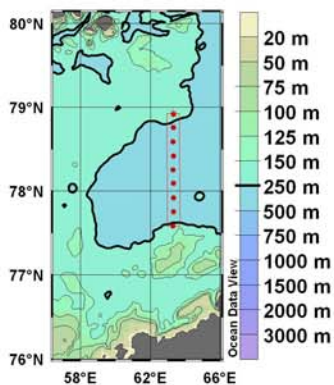


Sections of "Akademik Sergey Vavilov" - 1997 -1.



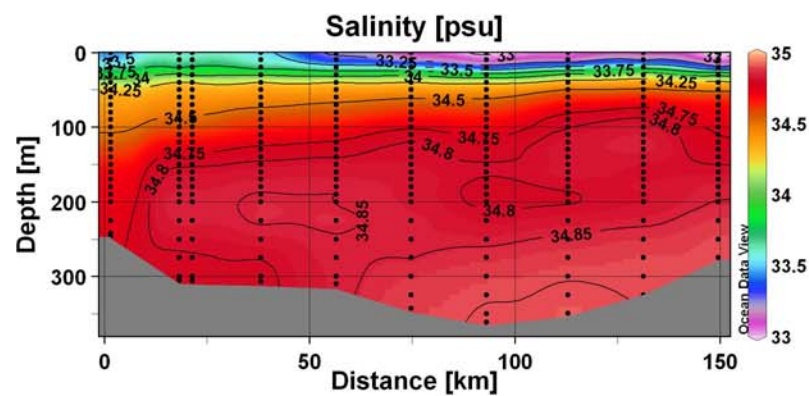
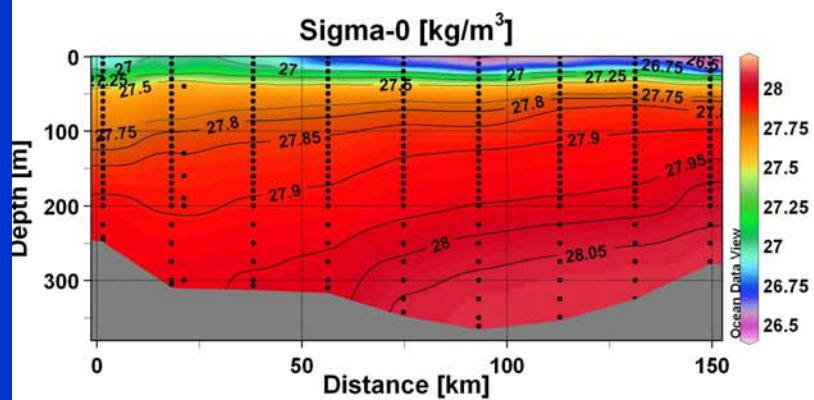
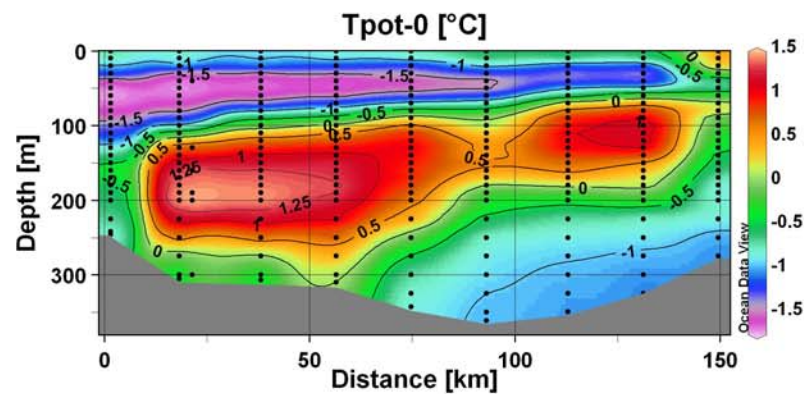
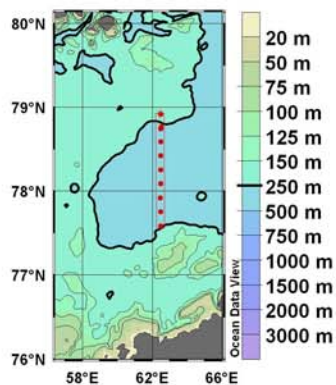


Sections of "Akademik Sergey Vavilov" - 1997 -2.



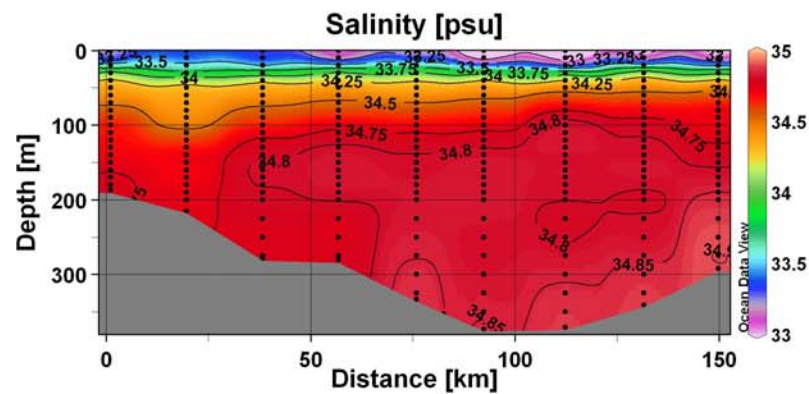
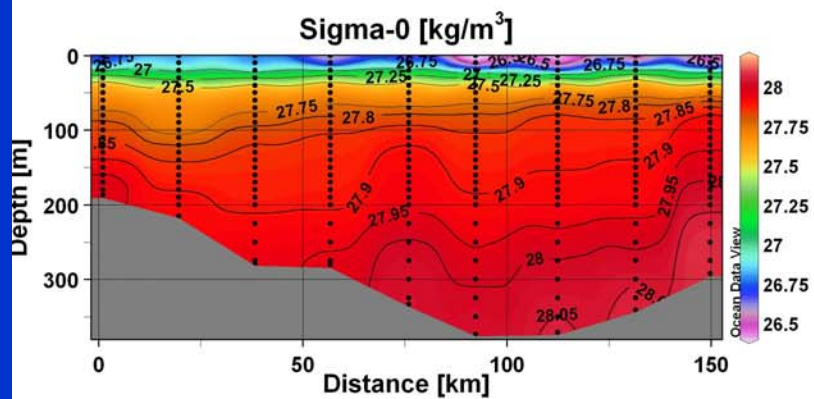
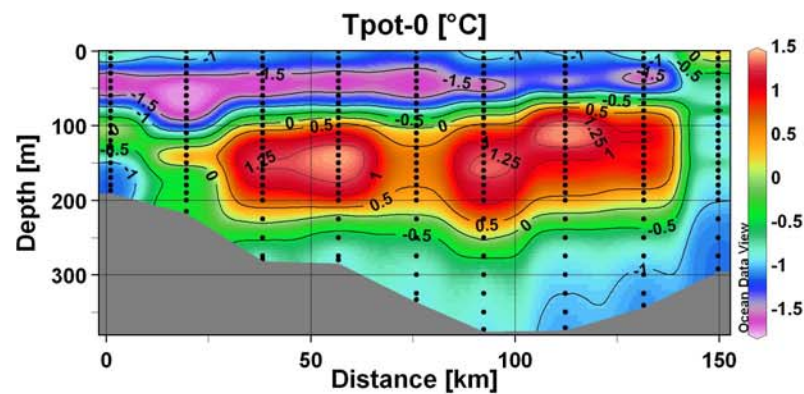
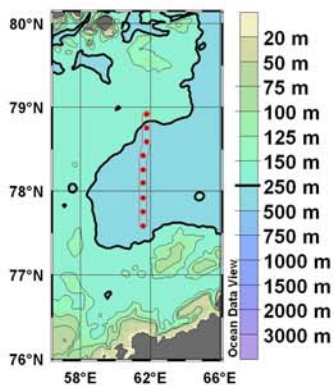


Sections of "Akademik Sergey Vavilov" - 1997 -3.



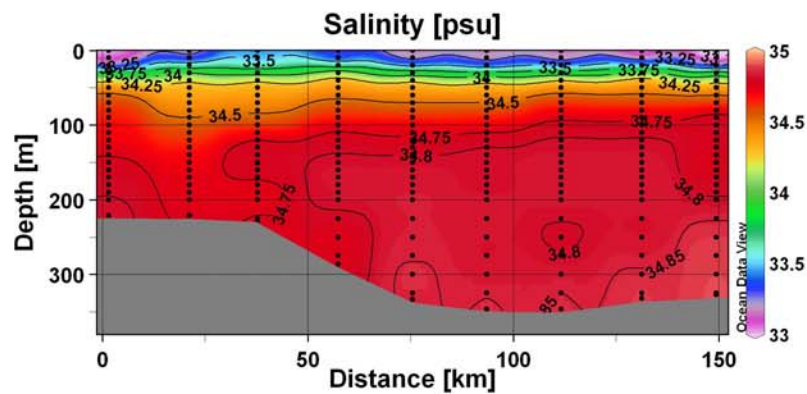
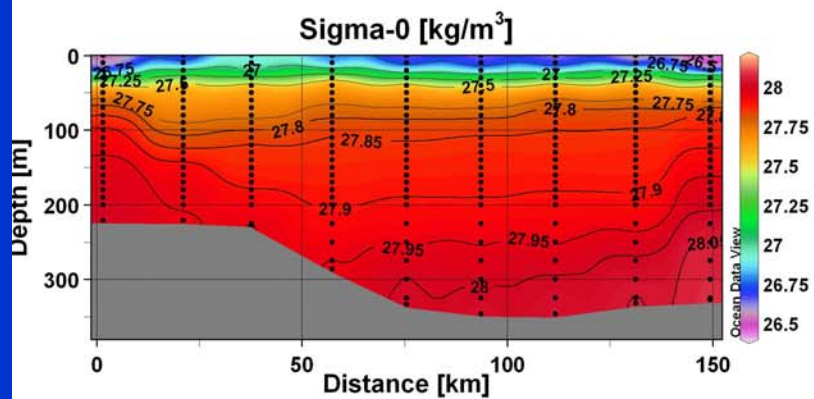
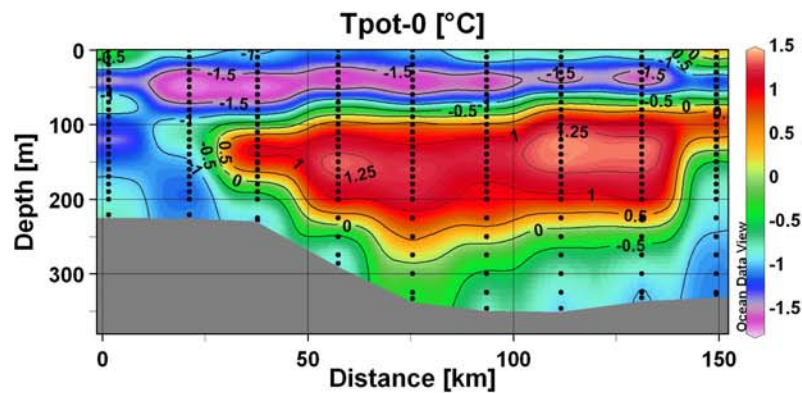
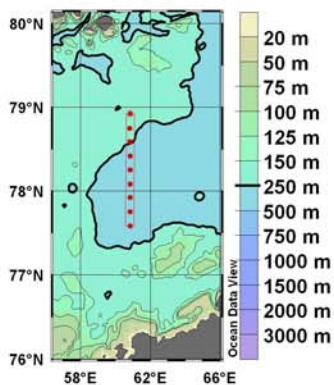


Sections of "Akademik Sergey Vavilov" -1997 -4.



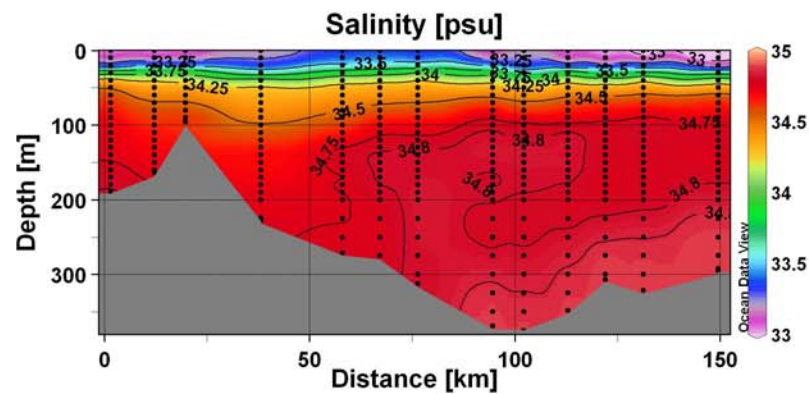
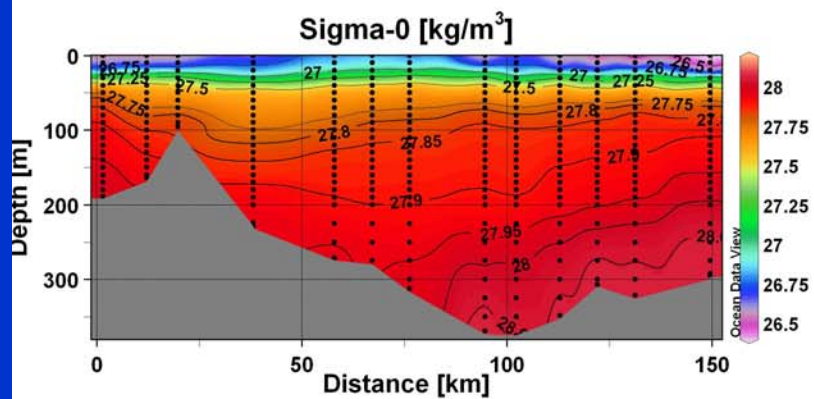
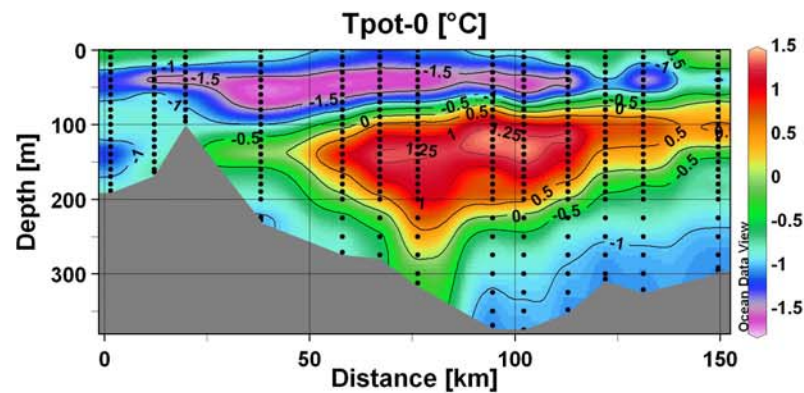
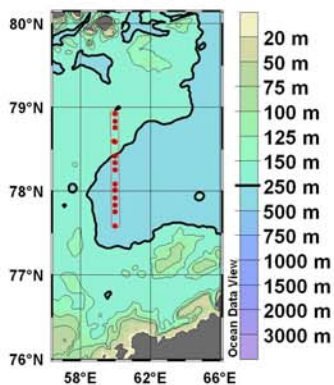


Sections of "Akademik Sergey Vavilov" -1997 -5.



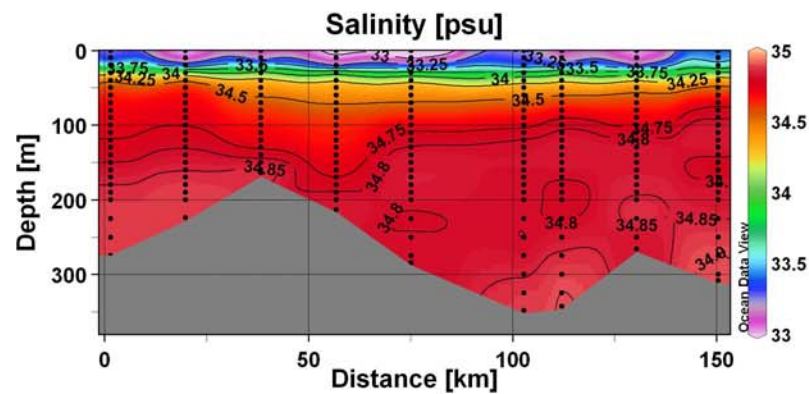
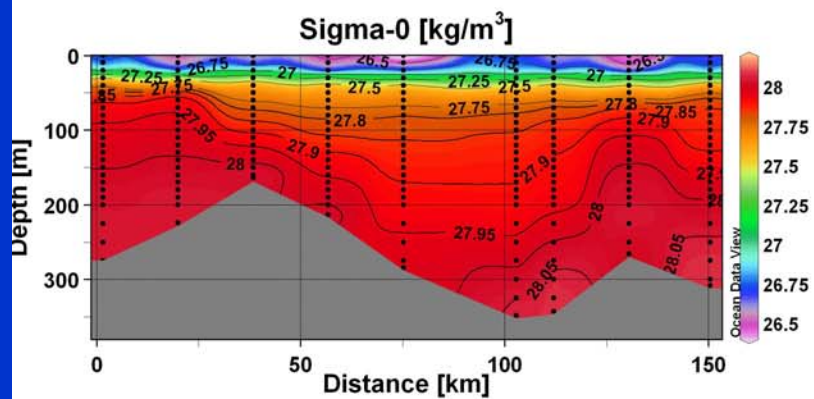
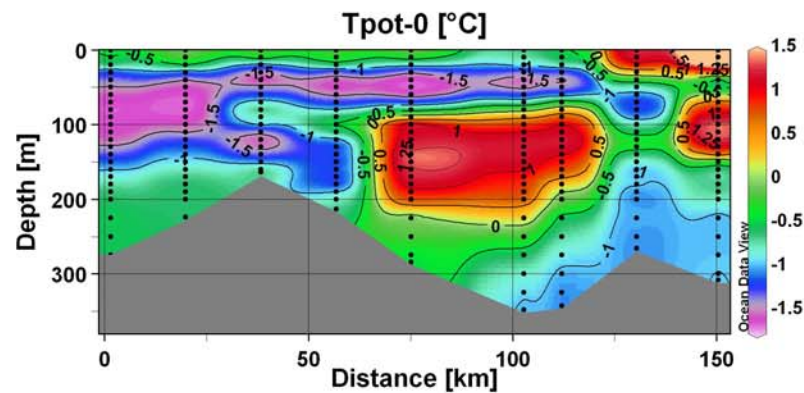
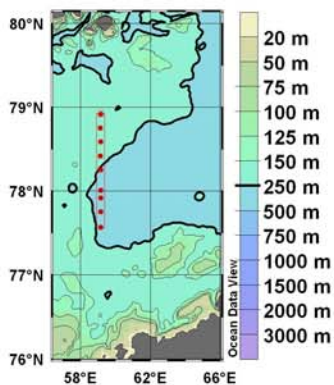


Sections of "Akademik Sergey Vavilov" -1997 -6.



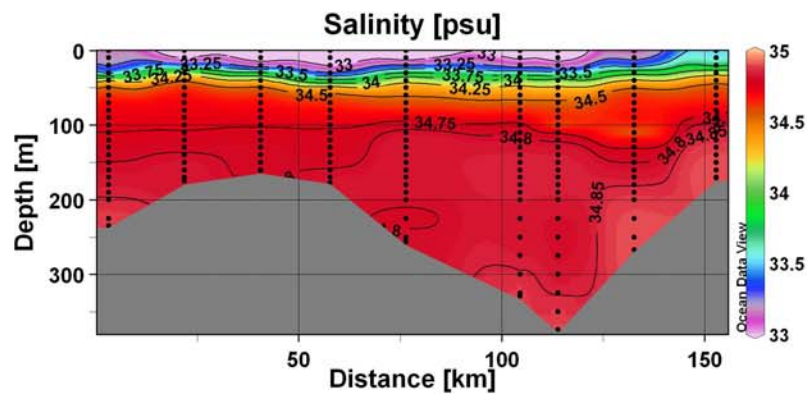
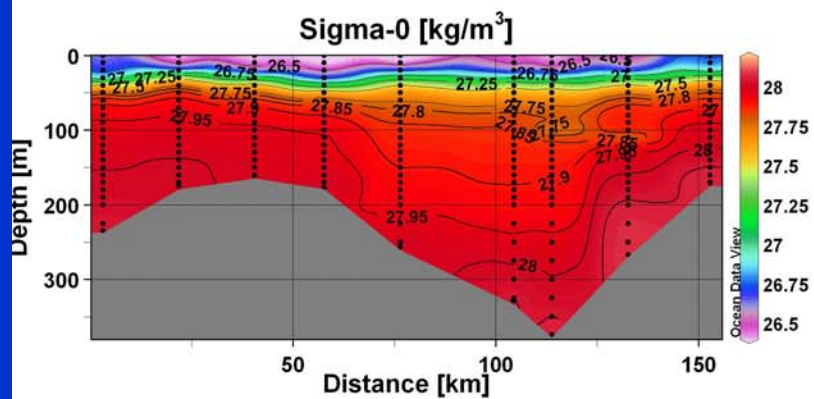
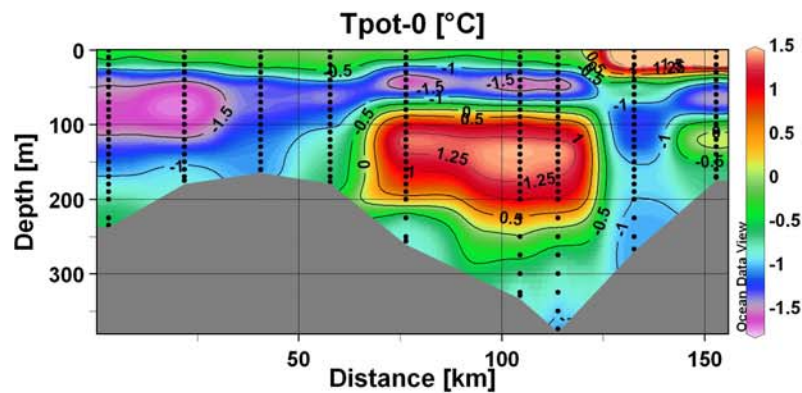
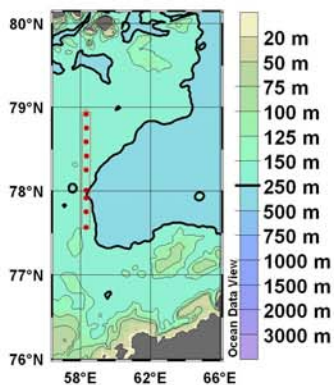


Sections of "Akademik Sergey Vavilov" -1997 -7.



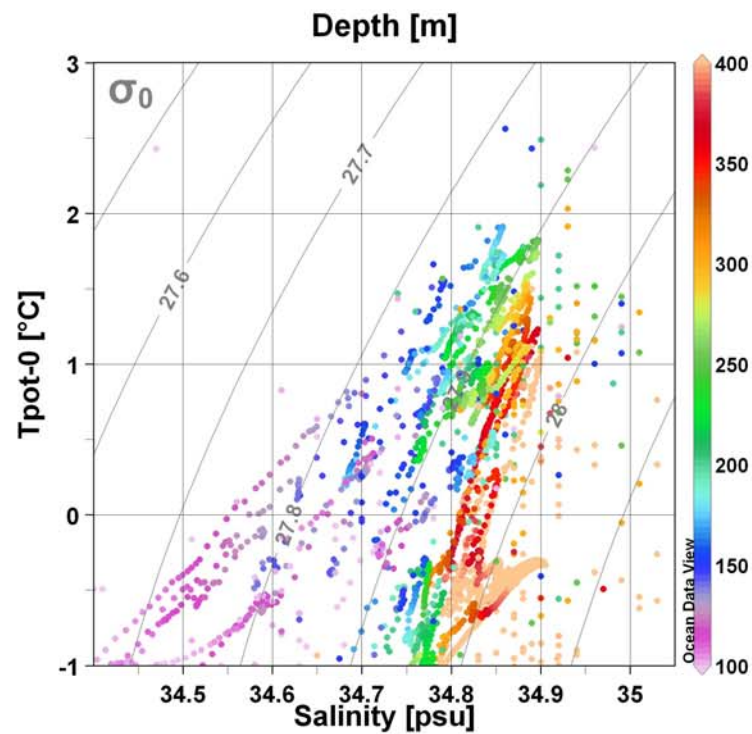
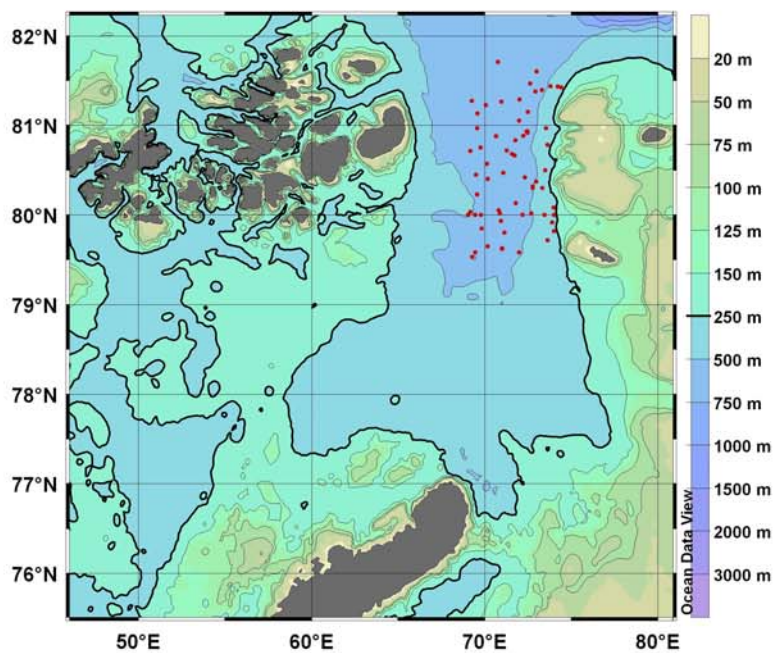


Sections of "Akademik Sergey Vavilov" -1997 -8.



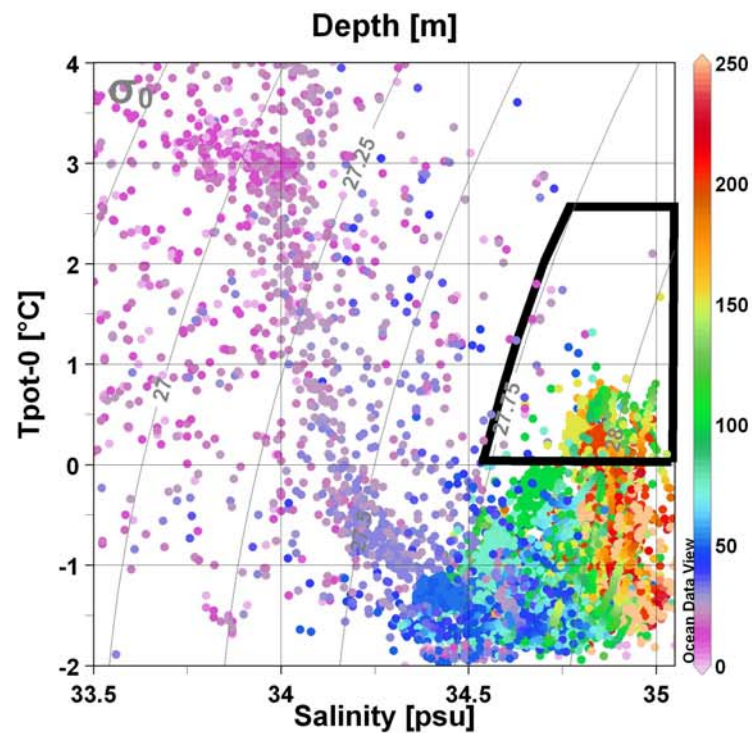
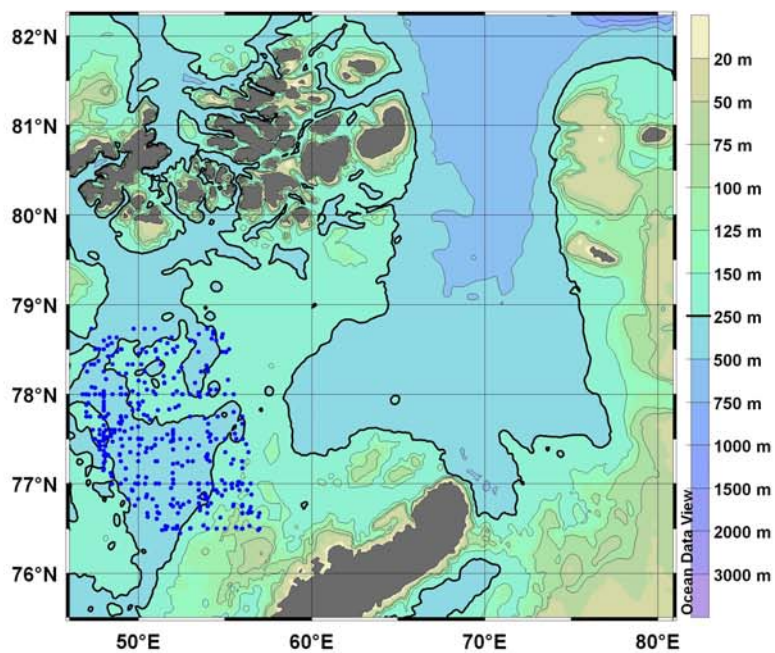


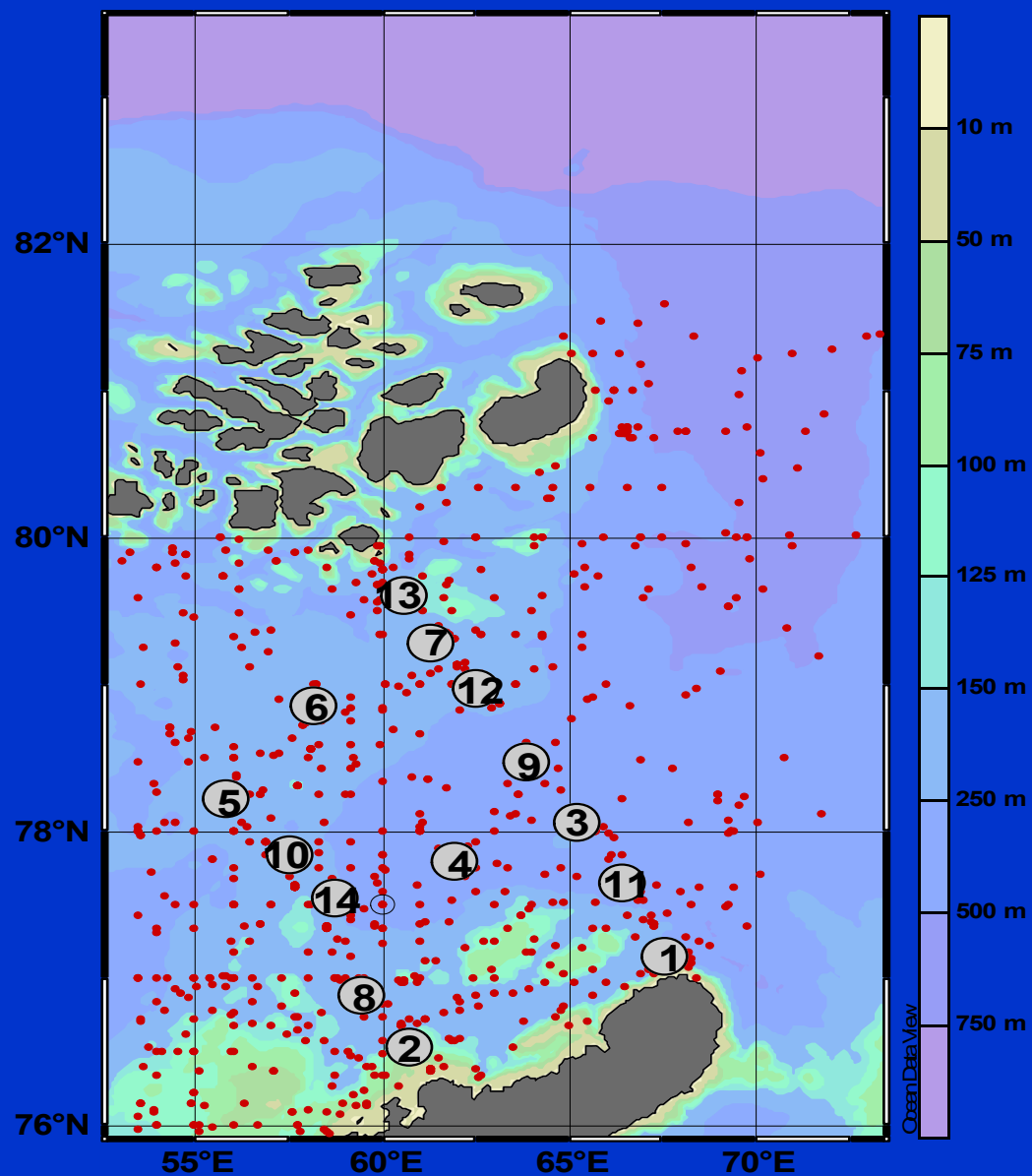
T,S characteristics of the “second” core of Atlantic Water within the St. Anna Trough.





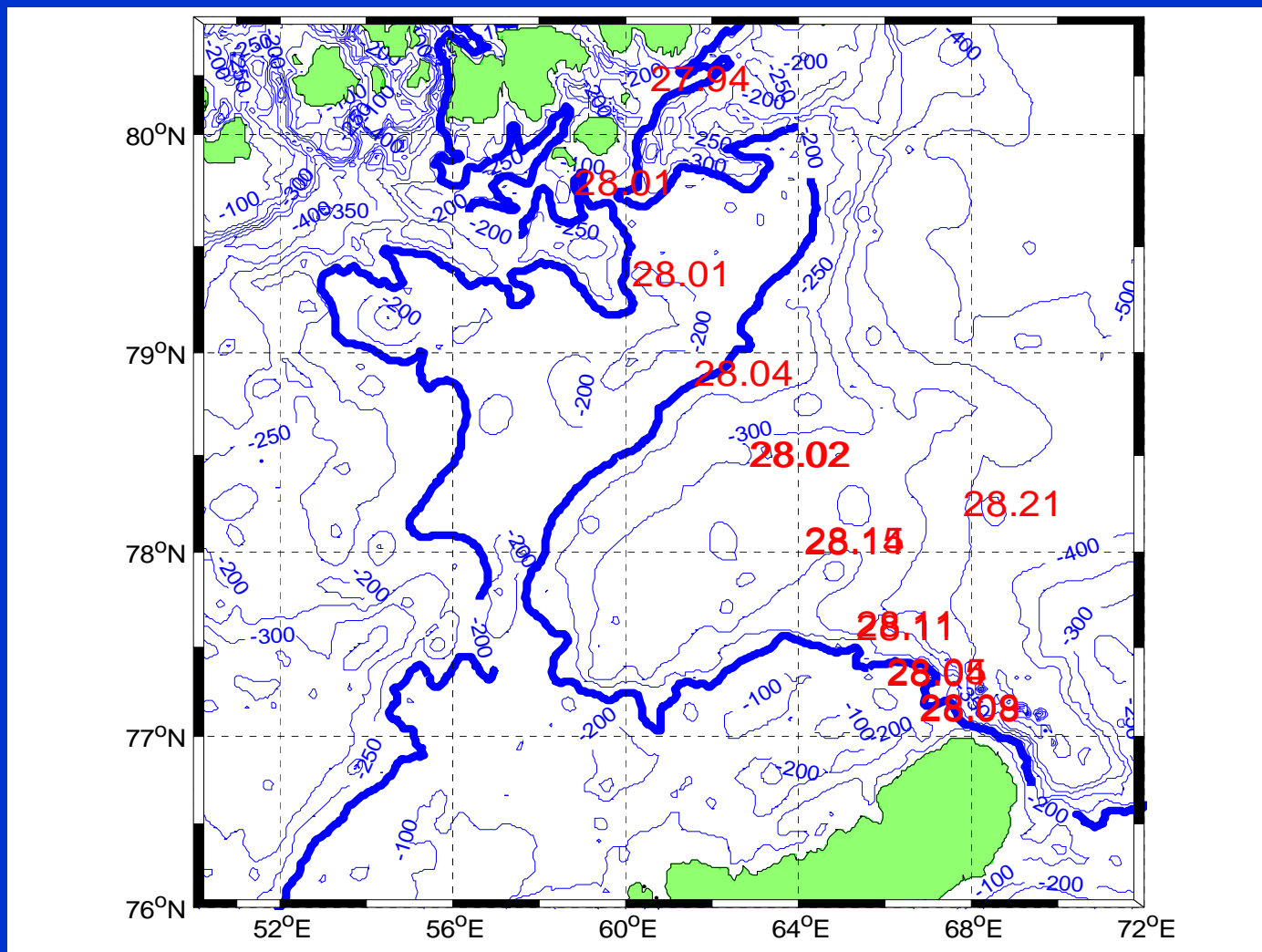
T,S characteristics of the potential “source” of the “second” core of Atlantic Water within the St. Anna Trough.

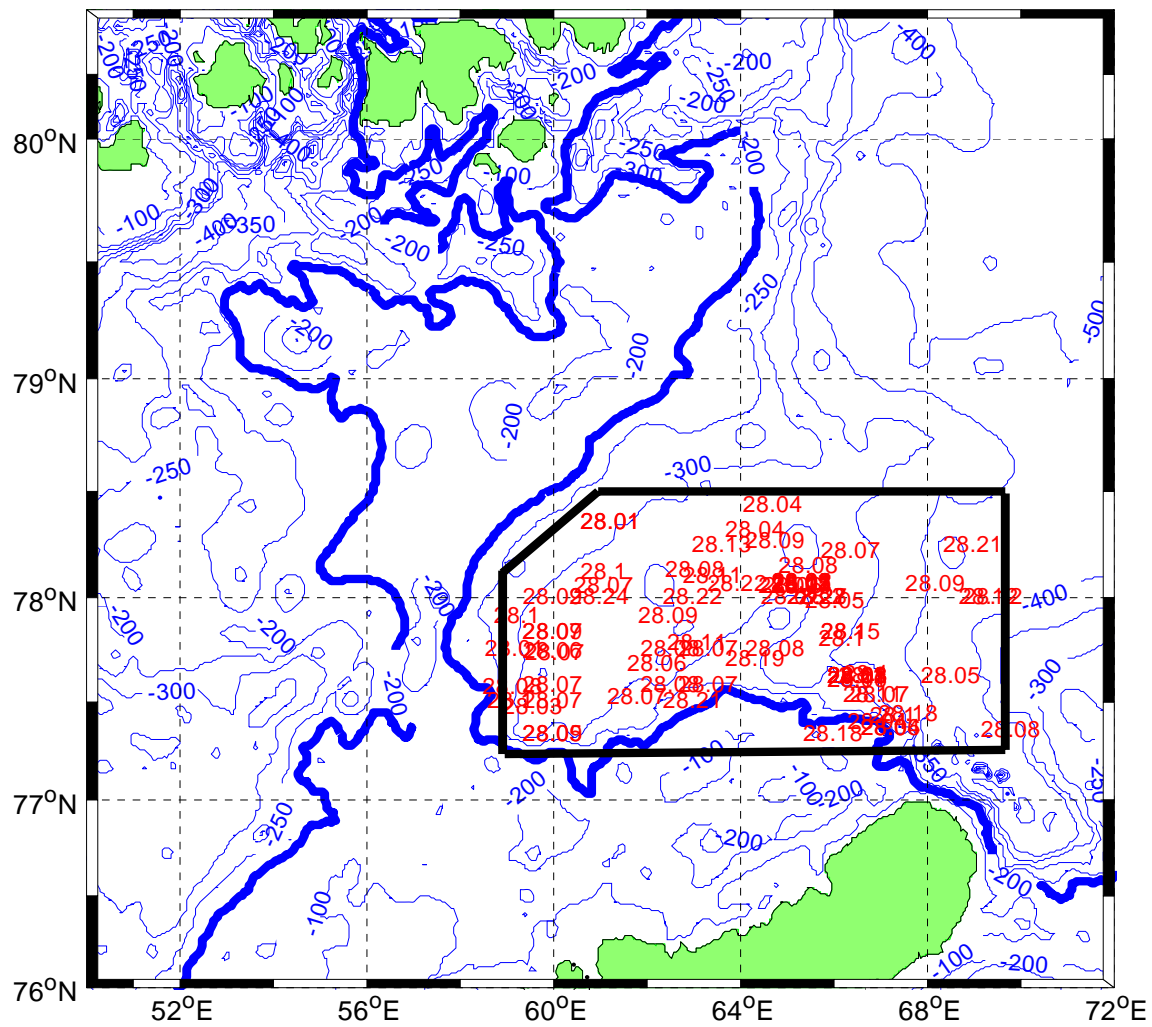


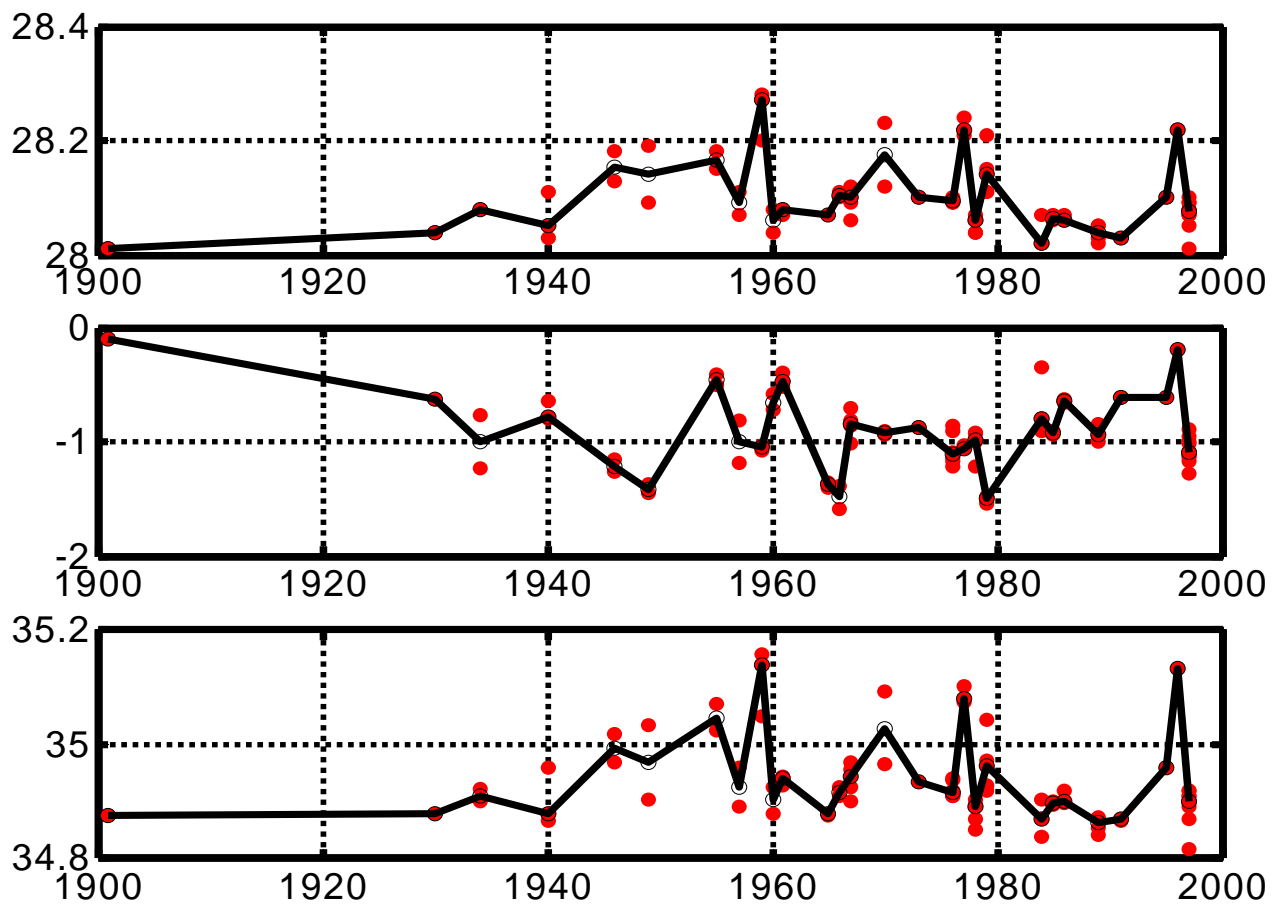




Potential density within the layer bottom – bottom+25 m during 1979.

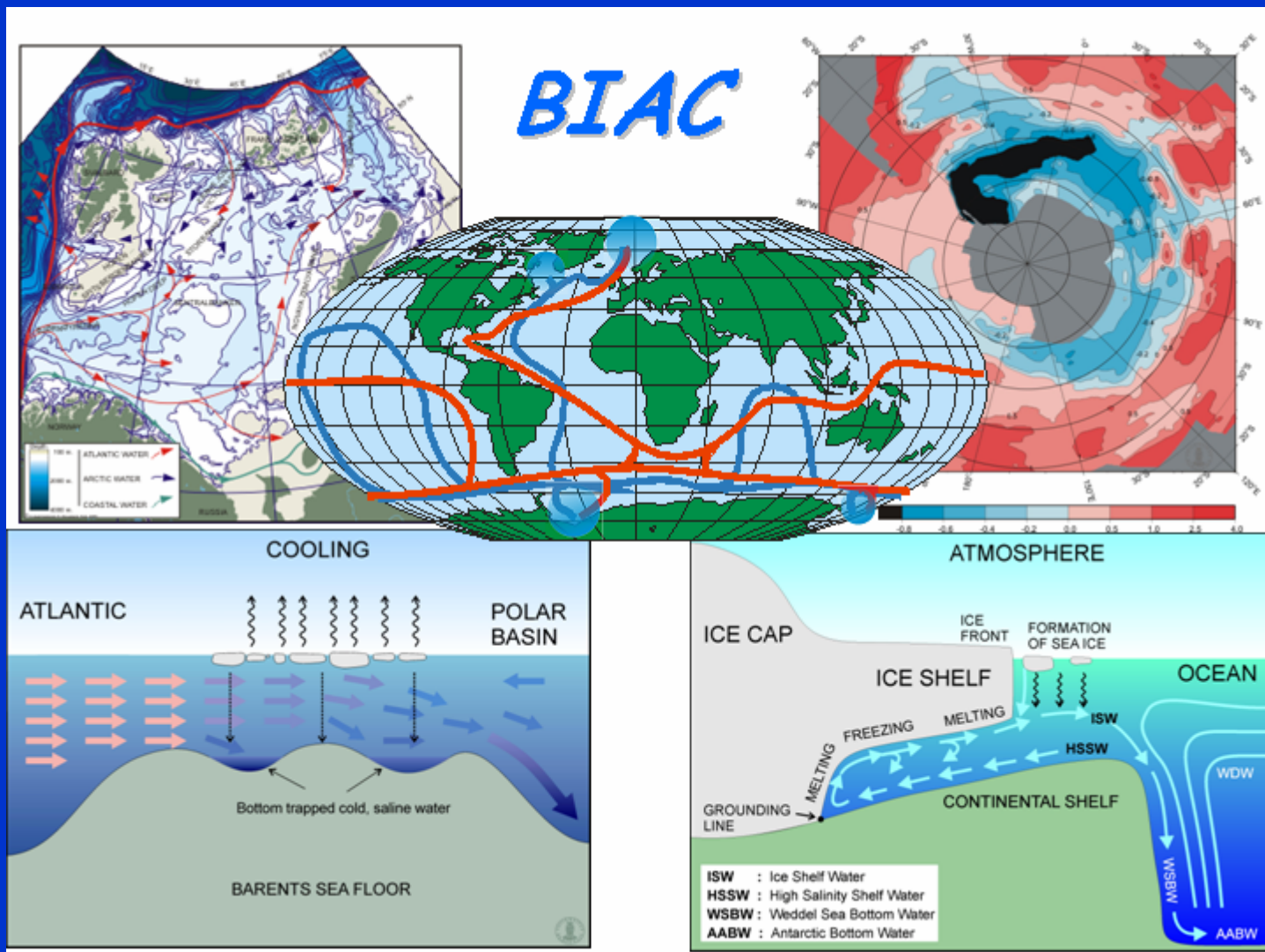






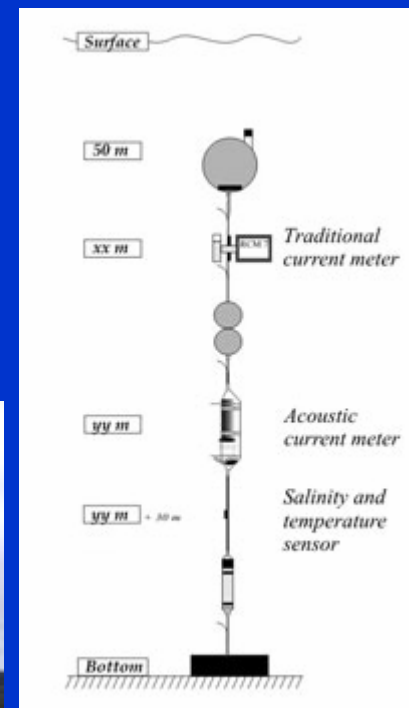
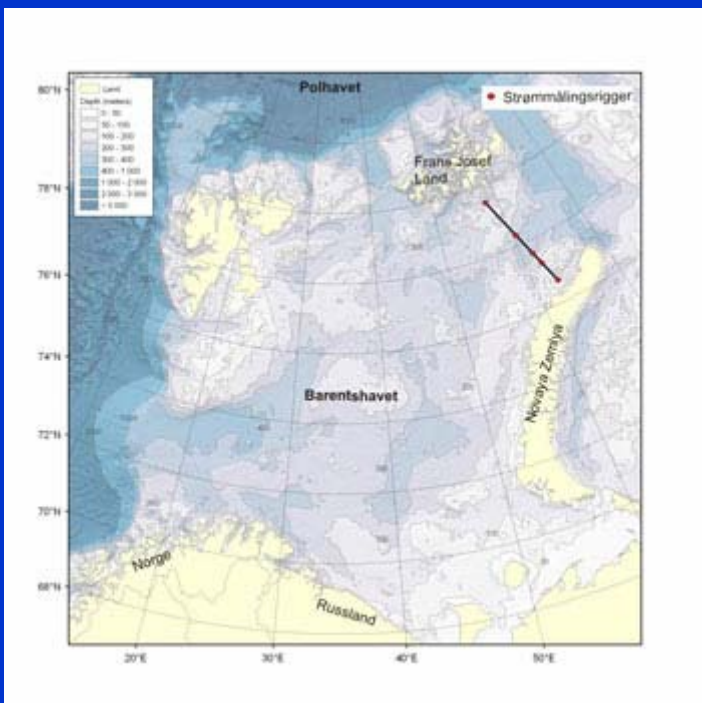


What NOW?



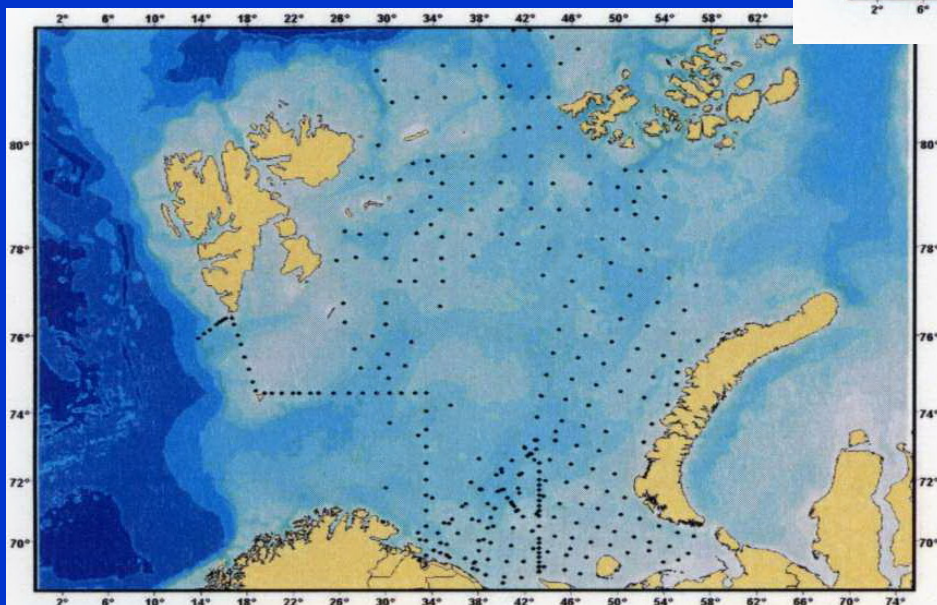
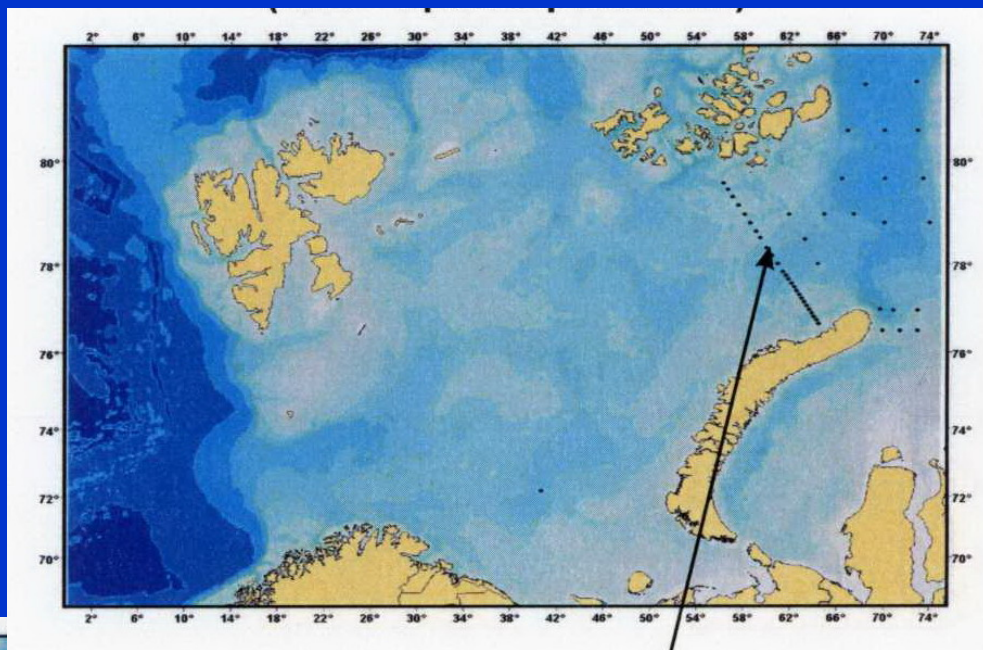


BIAC





**PINRO measurements 2007
under BIAC umbrella and
others projects.**





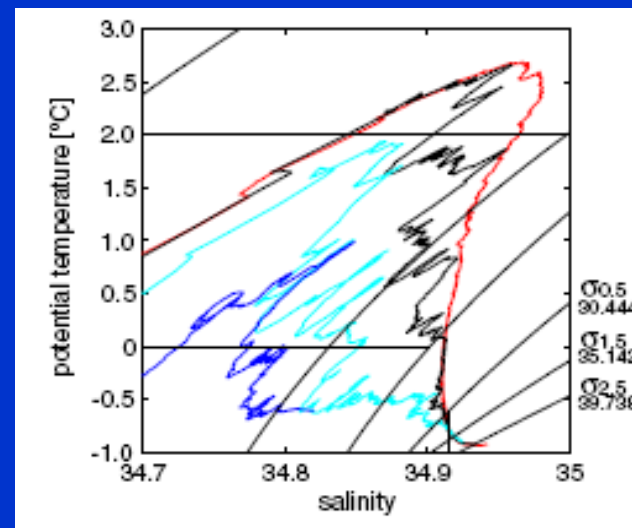
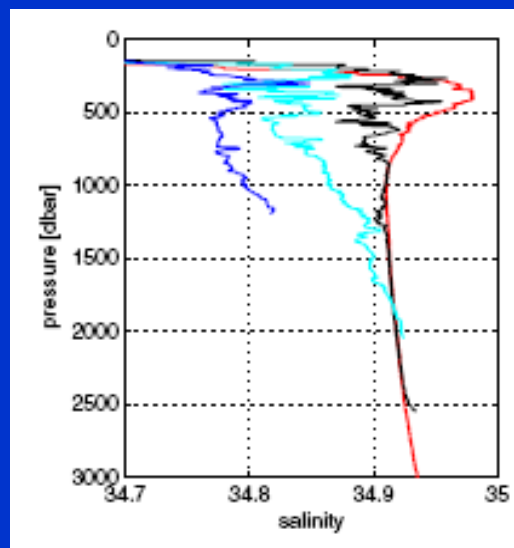
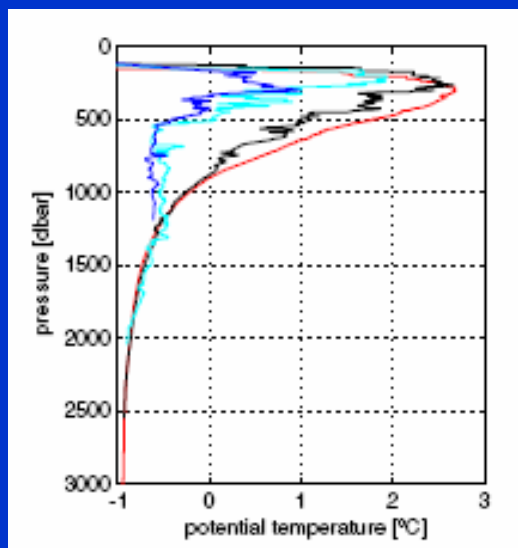
SPACE (EoI № 18) - Synoptic Pan-Arctic Climate and Environment Study.



DAMOCLES (EoI № 40) –Developing of Arctic Modelling and Observing Capabilities for Long-term Environment Studies



Interactions between the Fram Strait & the Barents Sea branches



Rudels et al., sub., 2005



SPACE and DAMOCLES cruise 2007 on the board of PS.

