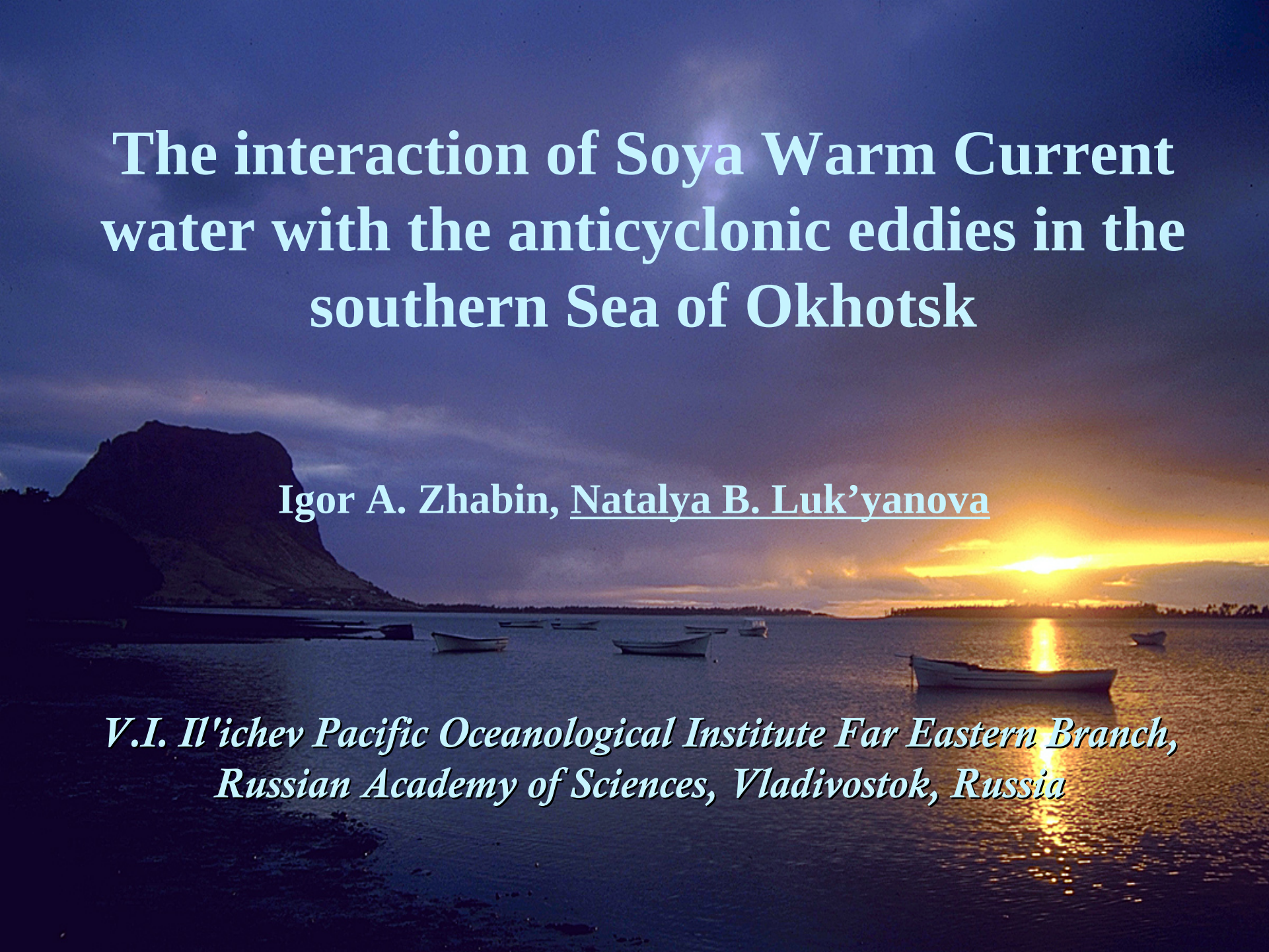
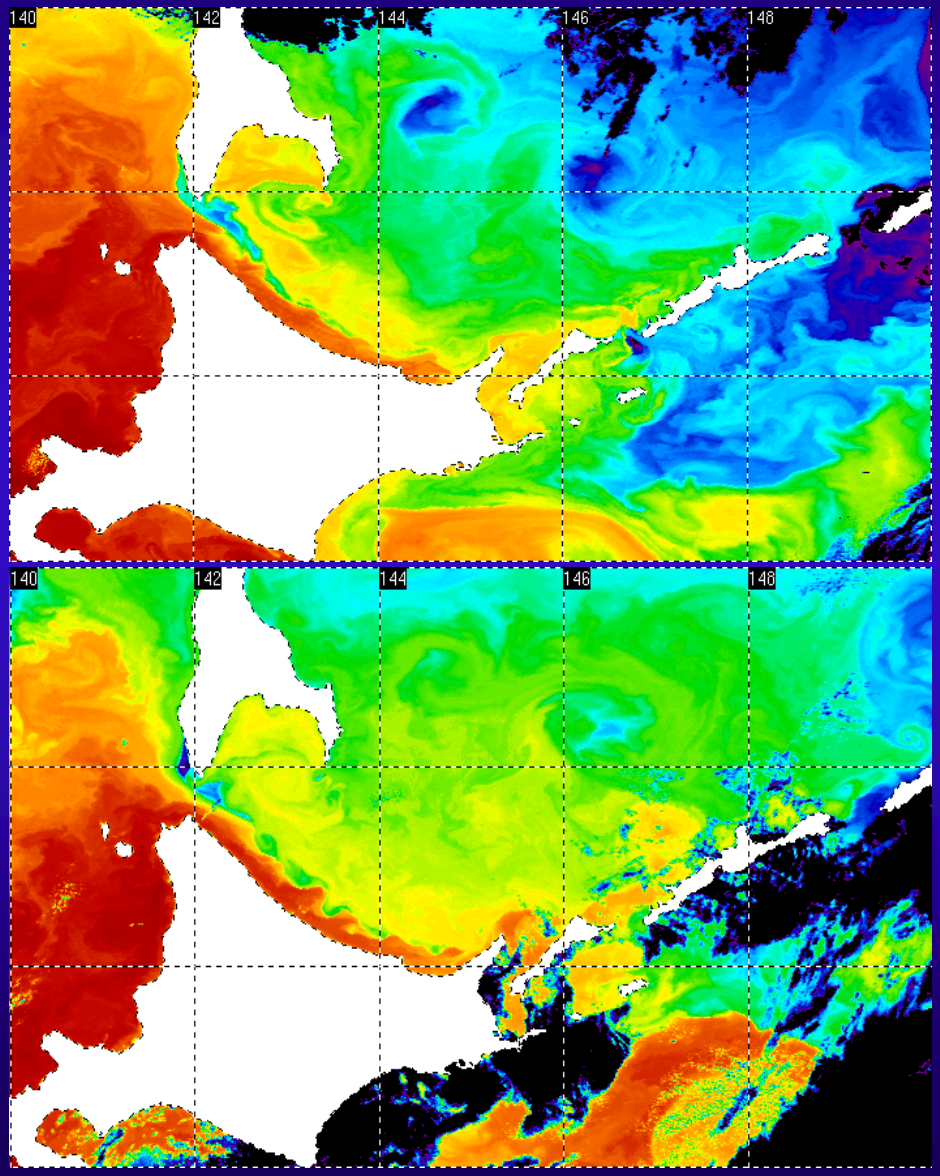
The interaction of Soya Warm Current water with the anticyclonic eddies in the southern Sea of Okhotsk



Igor A. Zhabin, Natalya B. Luk'yanova

V.I. Il'ichev Pacific Oceanological Institute Far Eastern Branch, Russian Academy of Sciences, Vladivostok, Russia

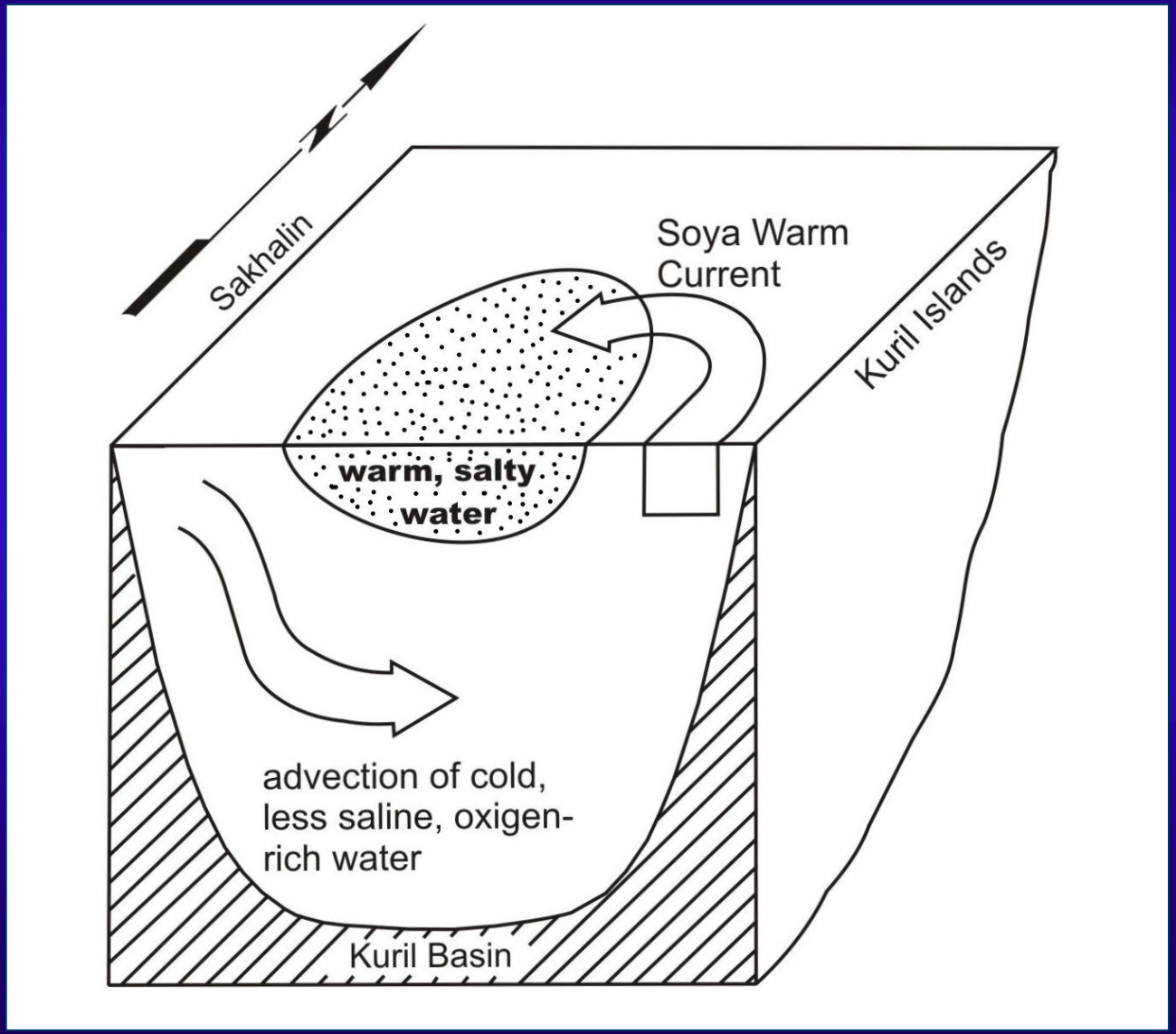
Soya Warm Current and anticyclonic eddies in the Sea of Okhotsk



Satellite infrared images of the southern Sea of Okhotsk. 15.09.2005, 19.10.2005, radiometer AVHHR, satellites NOAA 15-NOAA 12. www.salellite.dvo.ru

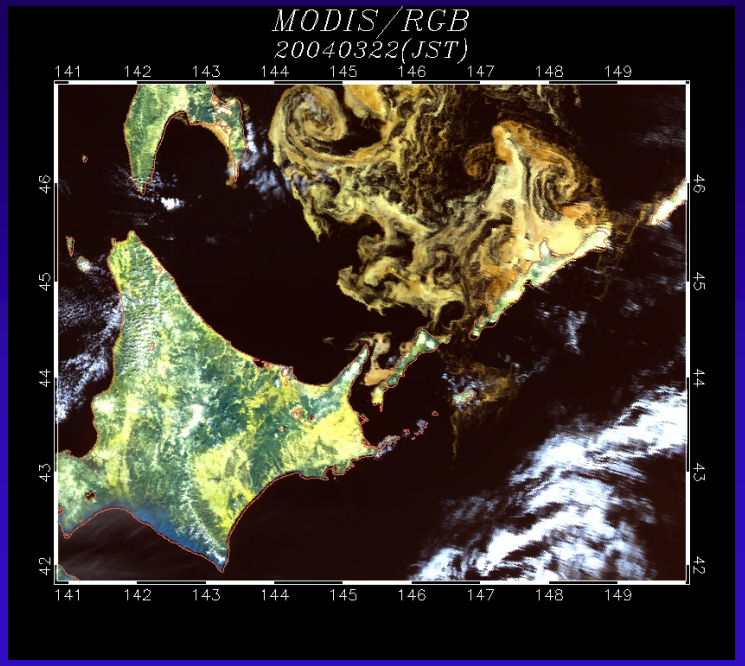
The aim, is to analyze the structure and variability of the eddy field in the southern part of Sea of Okhotsk and its interaction with the Soya Warm Current, based on the high resolution satellite data.

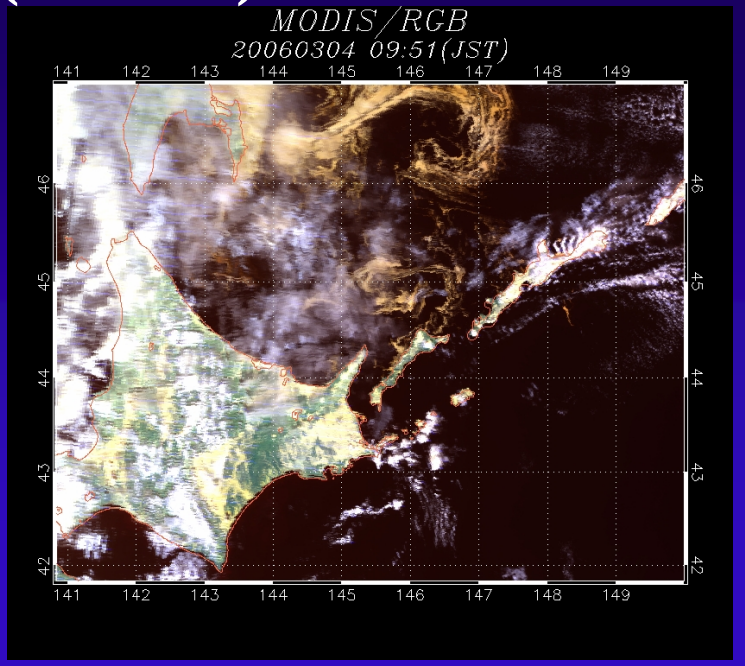
A schematic drawing of the summer water circulation in the Kuril Basin.

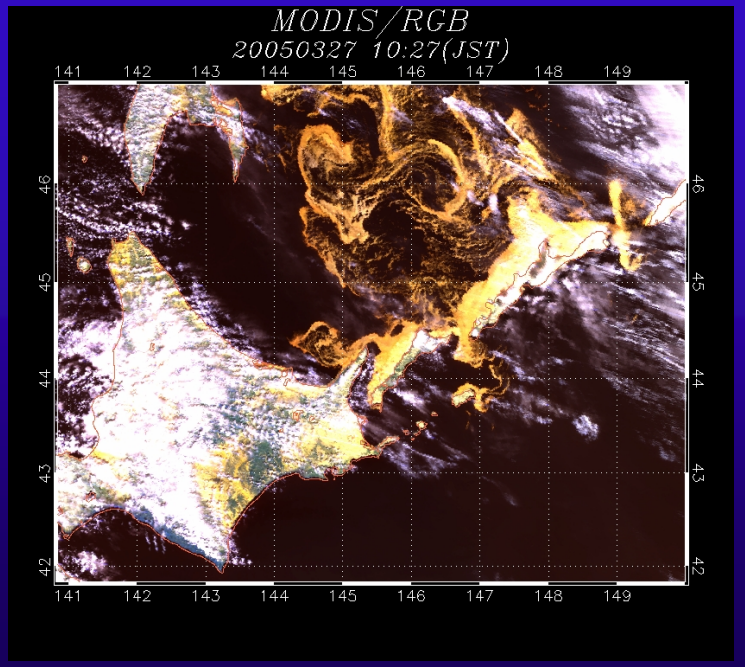


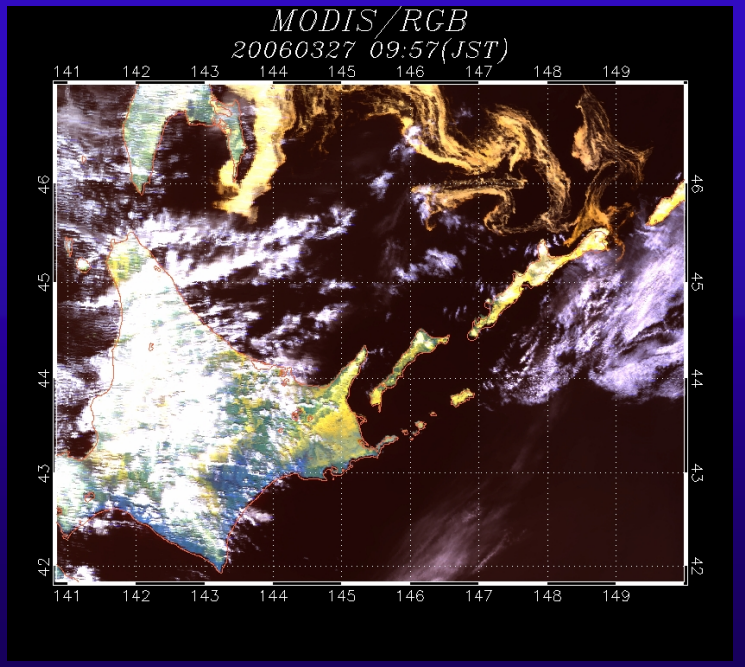
Masaaki Wakatsuchi and Seelye Martin, 1991.

Ice conditions (MODIS)









Data

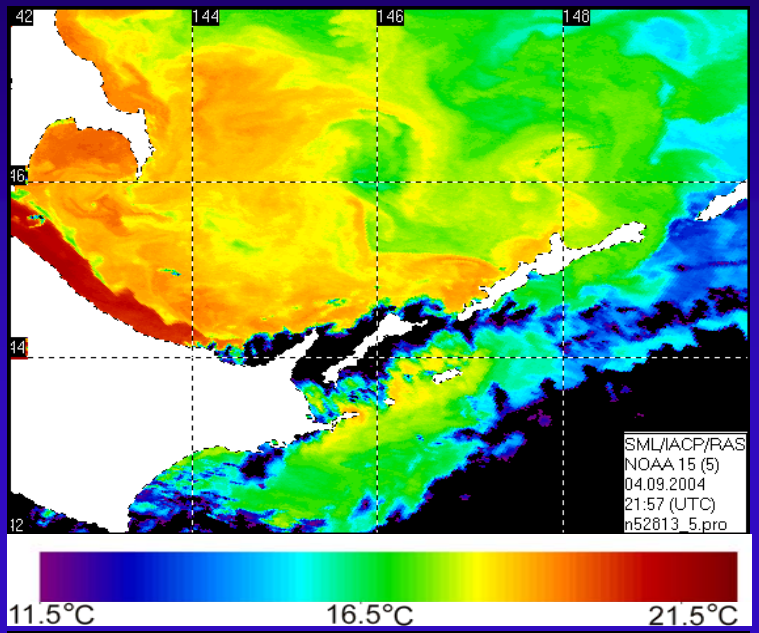
- Sea Surface Temperature from the Center for Regional Satellite Monitoring of the Environment, Far Eastern Branch, Russian Academy of Sciences. Satellite NOAA. (http://www.satellite.dvo.ru)

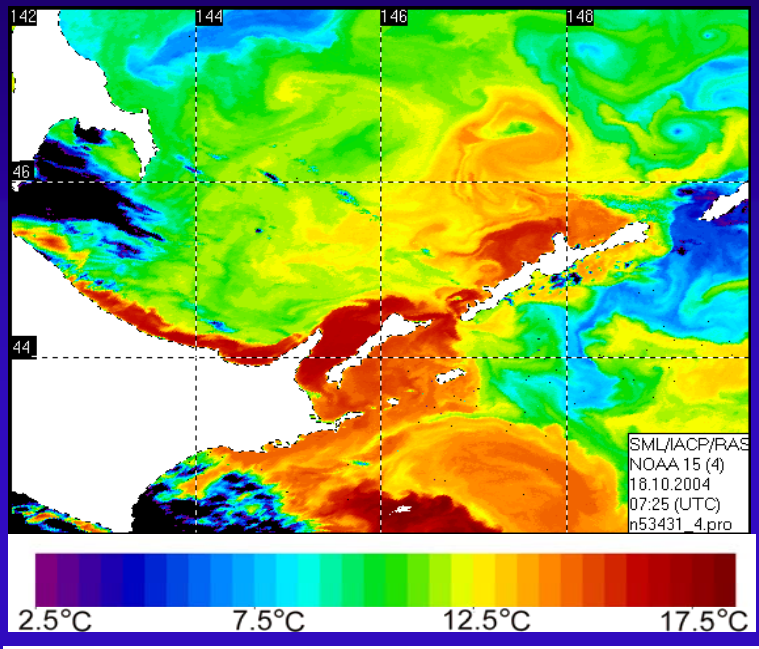
- Sea level anomaly distribution from satellite altimetry AVISO (http://las.aviso.oceanobs.com/las/)

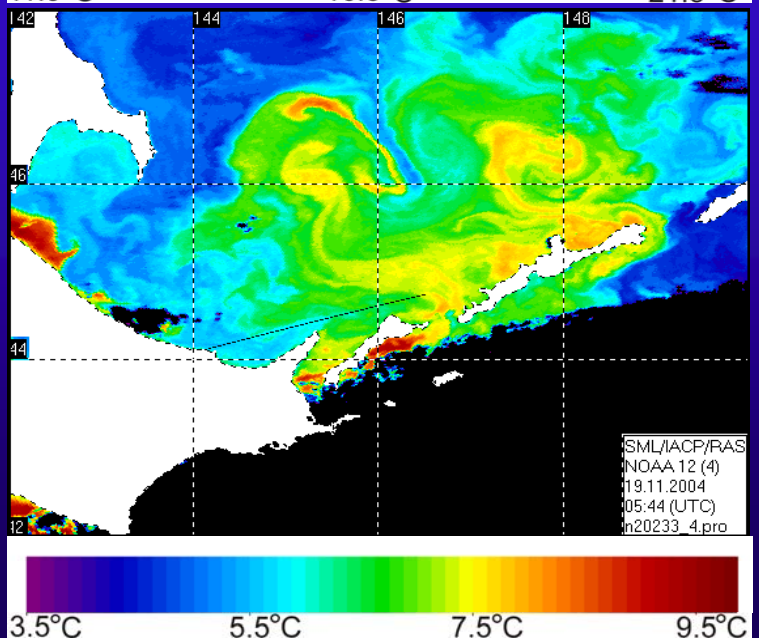
- Chlorophyll-a concentration from MODIS (Terra) (http://kuroshio.eorc.jaxa.jp)

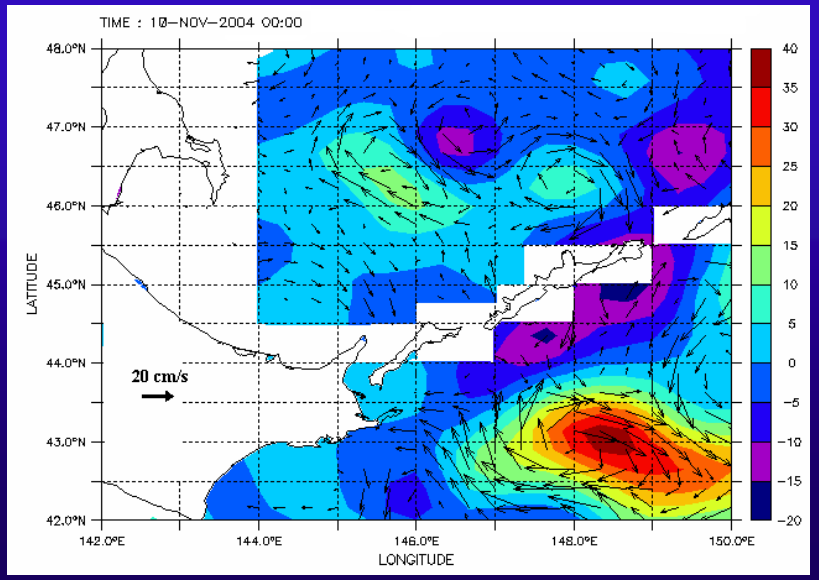
- Oceanographic survey data of August-September 1994. Research vessel “Akademik M. A. Lavrentiev”

The interaction of Soya Current with the anticyclonic eddies. Autumn 2004

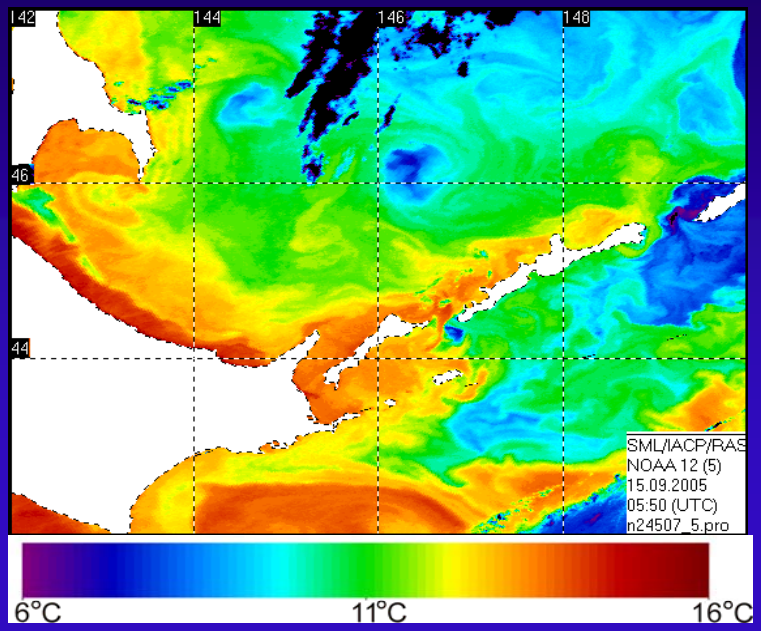


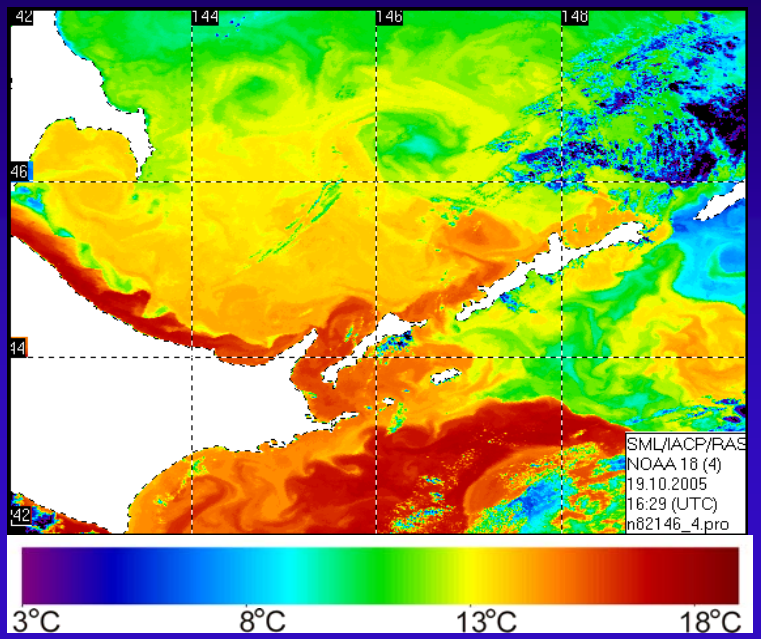


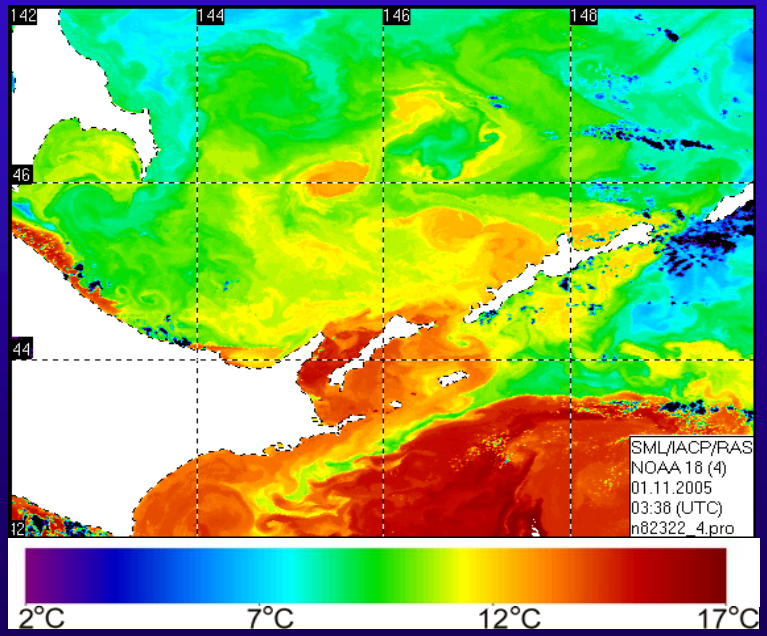


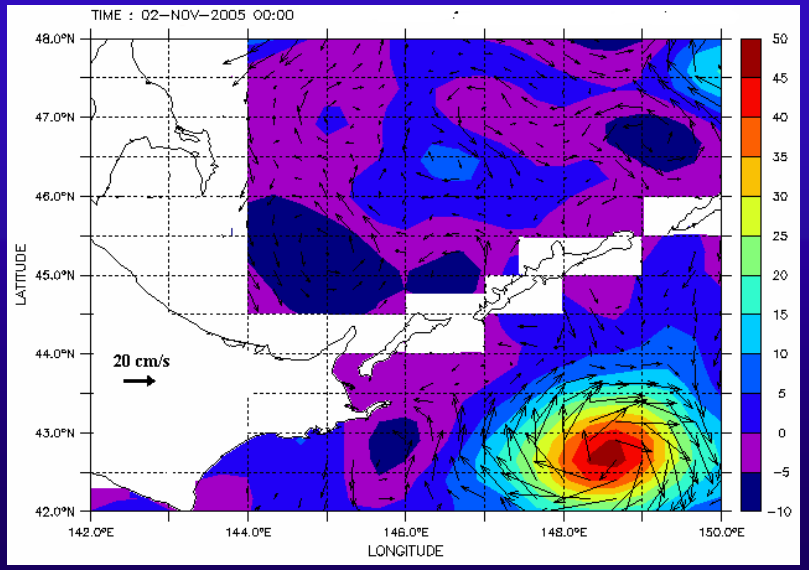


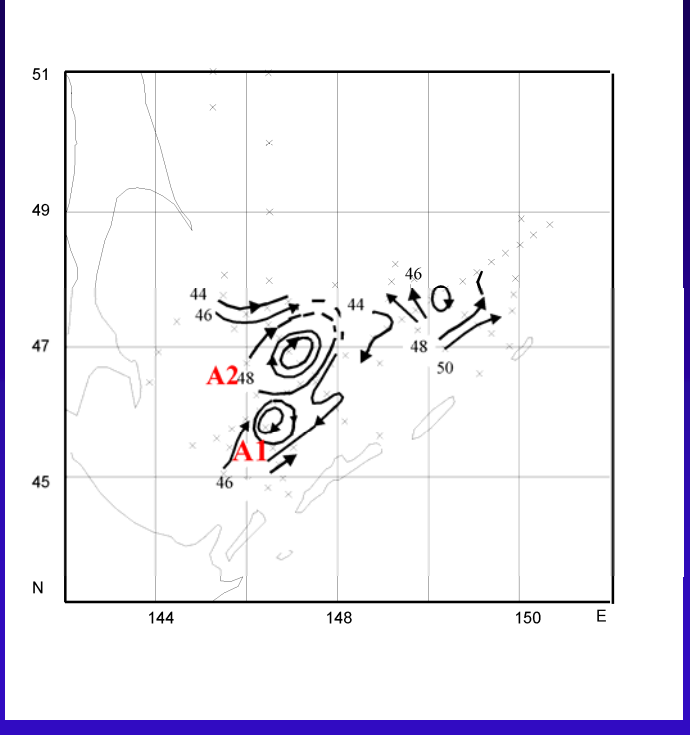
The interaction of Soya Current with the anticyclonic eddies. Autumn 2005





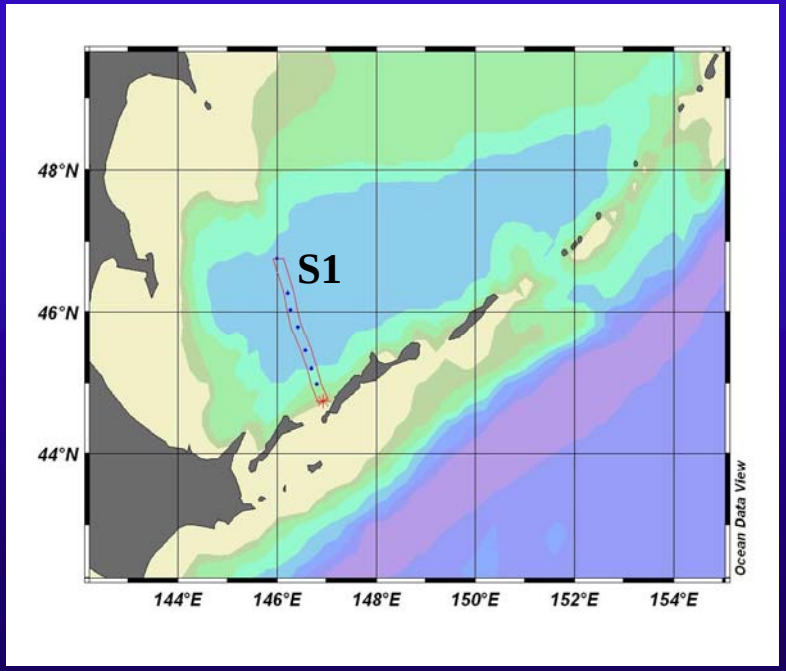


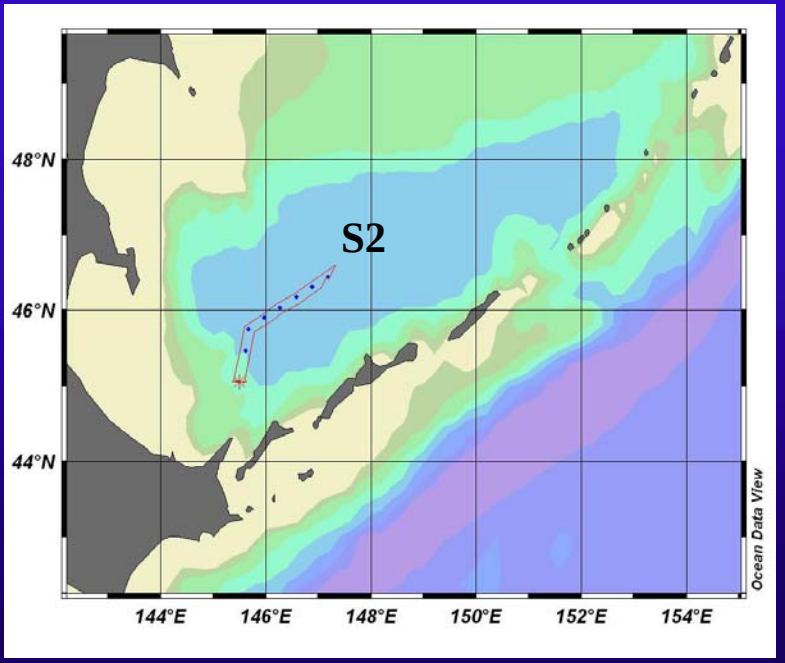




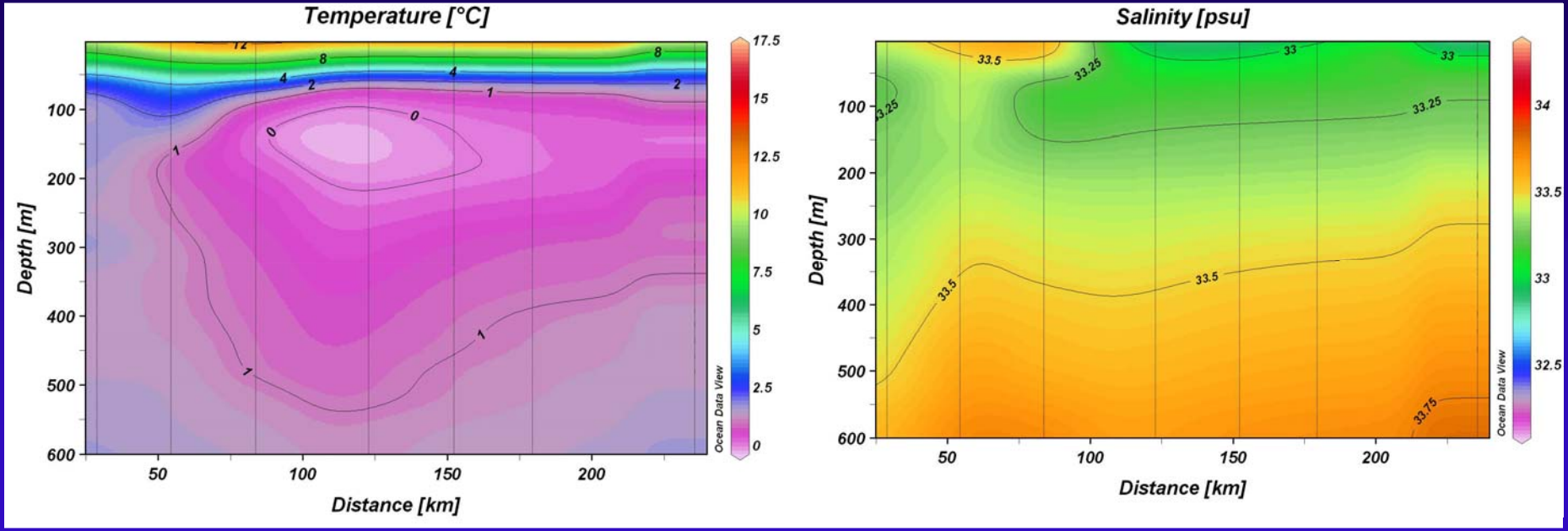
The map of dynamical topography, relative to 1000 dbar.

Oceanographic sections of August-September 1994. Research vessel «Akademik M. A. Lavrentiev»

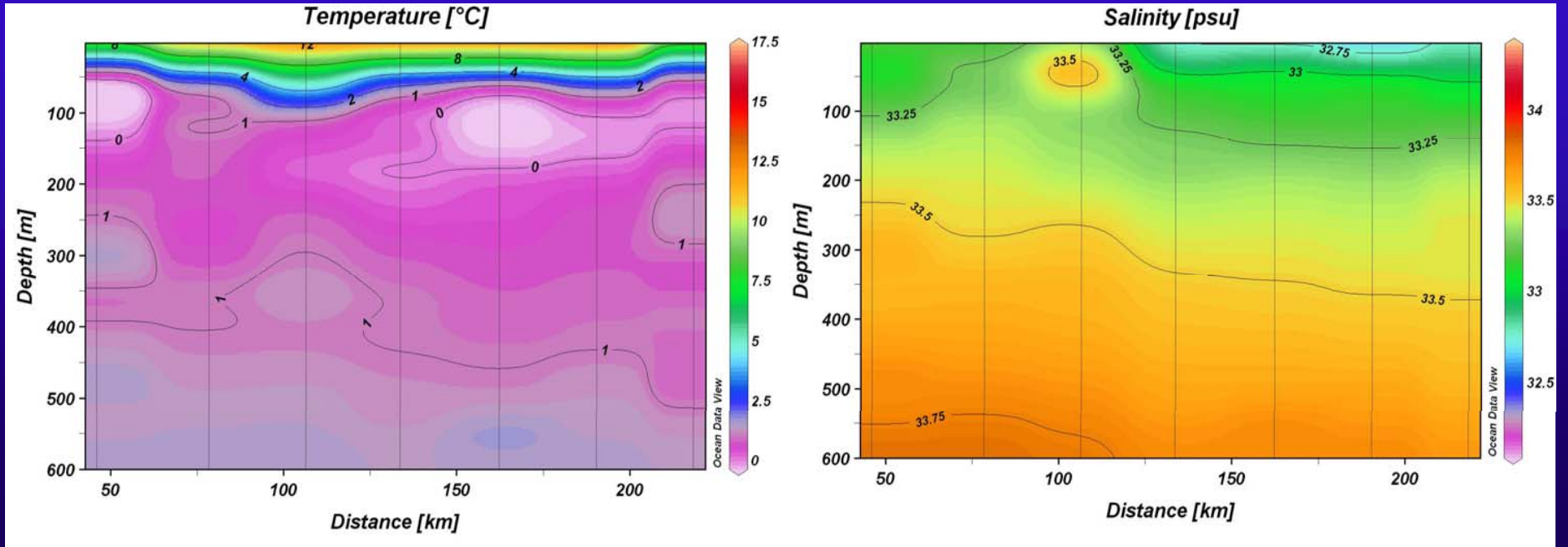


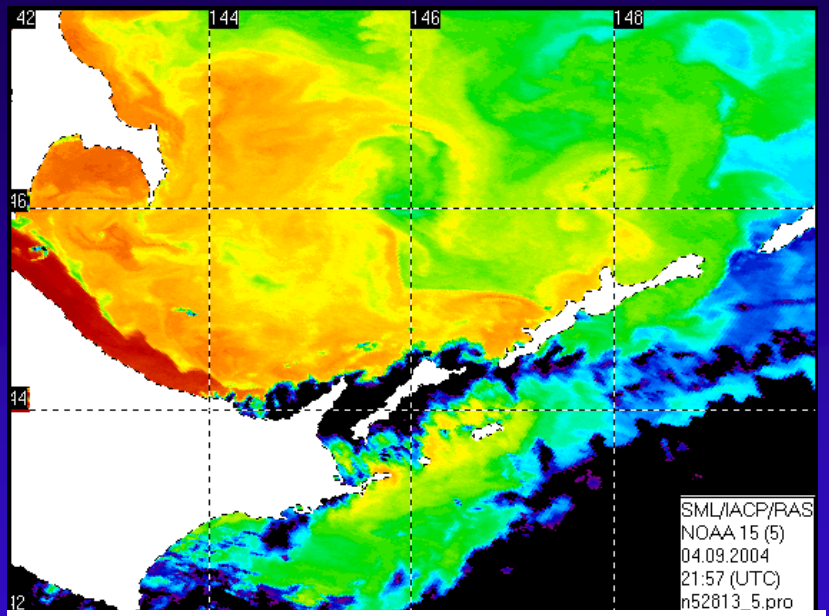


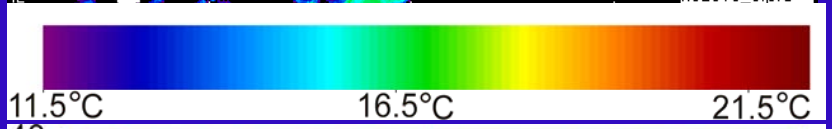
Section 1



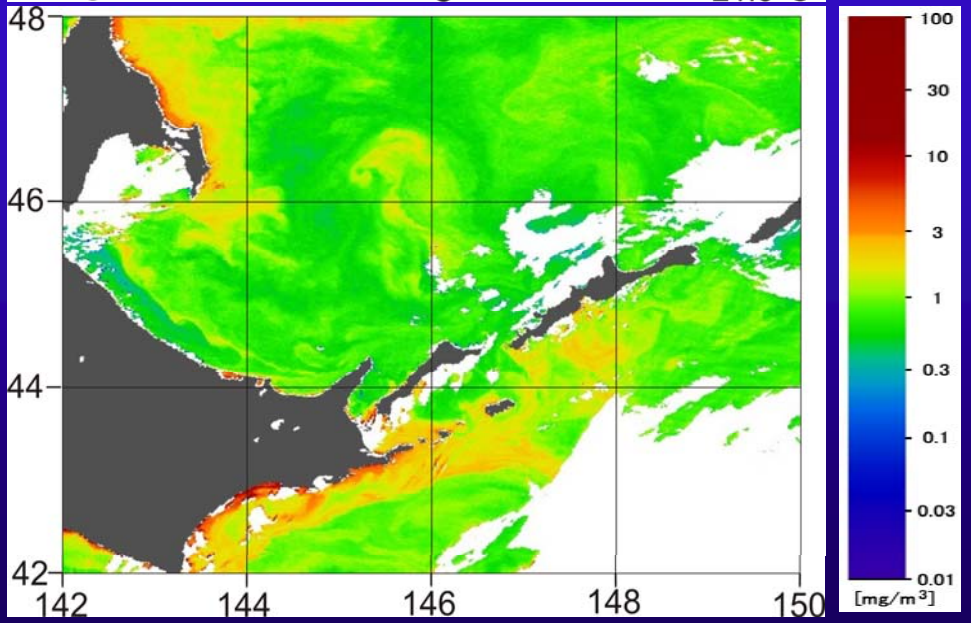
Section 2







Temperature, 04.09.2005



Chlorophyll-a, 04.09.2005
(MODIS)

Conclusion

As a result of the interaction of Soya current with anticyclonic eddies, warm and saline waters in the form of streamers enter the southern part of the Kuril basin, and the streamer core is located in the subsurface layer.

While moving, the Soya current forms warm and saline streams around a cold and less saline core of the eddy. Thus, the Soya current can take an active part in the transformation of the Kuril basin waters due to advection of highly saline water into deep sea areas. At the same time, the structure of the eddy field is practically not broken.


Thank you for your kind attention!