O28. MOORED PROFILER OBSERVATIONS OF SUBMESOSCALE COLD- CORE EDDIES IN PETER THE GREAT BAY OF THE EAST/JAPAN SEA IN LATE WINTER

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Submesoscale cold-core (T< 0°C) eddies were observed near the shelf break in Peter the Great Bay of the East/Japan Sea in March 2010. The observations were carried out at the moored automatic mobile profiler Aqualog station. The profiling was as frequent as every hour allowing us to obtain data with high temporal resolution. Aqualog delivered vertical profiles of ocean current velocity, acoustic backscatter at 2 MHz, temperature, and salinity between the depths of 20 m and 105 m. Below the profiling range, the InterOcean S4 current meter with temperature and salinity sensors was mounted on the mooring line. Above the profiling range, the RBR XR420 CTD logger with dissolved oxygen, chlorophyll-a fluorescence, and turbidity sensors was also mounted on the mooring line. Additionally we used the data of ship-born CTD casts, the satellite-born imagery and scatterometery, and the coastal weather station records. The data analysis suggests that the cold-core submesoscale eddies play an important role in supplying the densest water (y_u> 27.24 kg/m^3) from the northern part of Peter the Great Bay to the shelf break zone where it cascades downward into the deep northern basin of the Sea. The volume of the densest water in an eddy, according to our rough estimate, is 0.5-1 km^3. At the sea shelf, the densest water is richer in oxygen by 0.4 ml/l than surrounding water. It also contains much more suspended particles brought by the rivers.