

# **Satellite observations of internal waves supported by numerical modeling and measurements from ship**

**E.G. Morozov**(1), V.G. Bondur(2), and Yu.V. Grebenyuk(2)

(1) Shirshov Institute of Oceanology, Moscow, Nakhimovsky 36, 101000, Russia, emorozov@mtu-net.ru

(2) Scientific Center Aerocosmos, Moscow, Gorokhovskiy 4, 105064, Russia

Radar images of the ocean surface with manifestations of internal tides obtained from Radarsat-1 satellite in the region of Long Island east of the USA coast are analyzed. This region is known for intense internal tides generated over the continental slope. Clearly manifested internal tides are observed in the period from May to October. Radarsat-1 images with standard beam full resolution obtained within the NASAMQ N0361GB project are analyzed. The size of the images is 100 km  $\times$  100 km, and the resolution is 26 ÷ 30 m. Generation and propagation of internal tides was studied using a numerical model with horizontal resolution equal to 50 m. Wavelengths estimated in the model were equal to 25 km over the shelf and 125 km in the open ocean. The wavelengths were close to those observed from space. Maximum amplitudes of internal tides reaching 50 m were found at the shelf break. CTD-casts and towed measurements of temperature from ship as well as measurements of currents and temperature on a mooring deployed at the shelf break agree with the satellite observations and numerical calculations.