



Observation and simulation of internal tides on the continental slope of the southwestern East Sea

Seongbong Seo (1,2), Young-Gyu Park (1), Jae-Hun Park (1), Chang Woong Shin (1), and Chanhyung Jeon (1)

(1) Ocean Circulation and Climate Research Division, KIOST, Ansan 426-744, Korea, (2) Marine Environmental System, University of Science & Technology, Daejeon 305-350, Korea

Internal tides near the continental slope of the southwestern East Sea were investigated using two sets of 25 hours long hourly CTD and LADCP profiles obtained during spring and neap tidal periods. The profiles span the whole water column from the surface to about 260 m. Semi-diurnal internal tide was the strongest below the main thermocline (150–200 m) where 5°C isotherm was displaced more than 50 m were observed. The Richardson numbers were low (0–0.25) in layers where large vertical displacements were observed, suggesting internal tide induced mixing. Numerical simulations using an idealized vertical 2.5-dimensional numerical model based on the ROMS reveal that semi-diurnal internal tide was dominantly generated on the continental slope. Simulations using different configurations were conducted for further understanding of internal tide generation mechanism and its impact on ocean mixing in this region.