

2012 Special Program in Applied Mathematics and Applied Mechanics

Modeling the Kuroshio, eddy, and typhoon

2012 - 10 - 31 (Wed.)

15:00 - 17:00

308, Mathematics Research Center Building (ori. New Math. Bldg.)

A fine-scale, three-dimensional, primitive equation ocean model has been implemented to investigate the spatial and temporal variations of the Kuroshio. The structure and seasonal variations of the Kuroshio are reproduced by the model and are in agreement with observations. We further uses model results to examine how westward-propagating eddies behave as they interact with the Kuroshio east of the Luzon Strait. We are particularly interested on the conditions that determine whether or not eddies can westward through the Strait into the South China Sea (SCS). In addition, we examine the forcing mechanism responsible for the Kuroshio intrusion into the SCS. A series of experiments was performed to identify the wind-related forcing regulating the intrusion. Finally, we describe model simulation of intense surface cooling induced by typhoon Kai-Tak (2000)

