HyARC Seminar (HyARC Seminar#170)

Date: April 11 (Friday) 15:00-

Room: The meeting space (#617) of Research Institutes Building.

Speaker: Y. Hsueh, Professor Emeritus (Earth, Ocean, and Atmospheric Science Department, Florida State University)

Title: Collision and Separation of Continental Shelf Currents

Abstract:
The presence of opposite running wind and open-ocean influence driven currents in continental shelf regions in China marginal seas raises the possibility of current collisions leading to flow separations that give rise to cross-shelf fronts. Nonlinear analytic models suggest the separations are governed by the balance of integrated momentum. Thus the crux of the problem lies in the determination of the dividing streamlines in the collision. In a barotropic ocean, the dividing streamline is dictated by the sea-level height difference found across the separation flows. In a reduced-gravity ocean, it is shown to depend upon the upper layer thickness found in the at-rest regions bounding the separation flows. The advent of the glider in mapping the coastal ocean environment provides an effective way of capturing the collision dynamics. Interdisciplinary field experiment with such glider utilization forms the best hope for a resolution of the cross shelf transports.

(given in English)