



## **A nested model for the Eastern Brazilian Shelf: Cross-shelf eddy interactions and validation on altimeter data.**

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The Eastern Brazilian Shelf is a narrow, oligotrophic, and bathymetrically complex shelf, on the southwestern South Atlantic. On such narrow shelves, ocean - shelf interactions processes are regarded as effective mechanisms for promoting nutrient enrichment and shelf circulation variability.

The ongoing modeling research attempts to evaluate some of the mechanism related to the cross-shelf eddy interactions. The model used is the primitive, nested, three dimensional, stretched terrains - following coordinate, Regional Ocean Modeling System (ROMS). The larger scale grid ( $1/3^\circ$ ) run was nested on a meso-scale grid ( $1/9^\circ$ ) between  $7^\circ$  -  $20^\circ$  S. The model was initiated with both climatology and global models outputs (e.g. SODA).

The Model validation is based on the analysis of the mesoscale variability of the eddy kinetic energy (EKE), calculated from TOPEX/Poseidon, ERS-1/-2 and Jason combined data for sea level anomaly (SLA), obtained from the archiving, validation, and interpretation of satellites oceanographic (Aviso). The altimeter data used covers over 12 years of data, from 14 October 1992 to 05 January 2005, and presents a  $1/3^\circ$  resolution.

Recurrent eddy activities are frequently noticed on the meso-scale frame. Preliminary estimates of the cross-shelf transport are discussed.

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