Interaction of the Kuroshio with the Northern Bicol Shelf in the Philippines: Implications on Biological Productivity

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Objectives
- Characterize chlorophyll variability in the Bicol Shelf Area
- Use chlorophyll as a tracer for ocean currents and features

Methods
- Data set: Daily MODIS images from 2003-2007
- Monthly composites
- Analysis: Empirical Orthogonal Functions

Daily chlorophyll images showing eddies
- Eddies always cycloic
- Vary in size but typically 50km diameter
- Typical cycloic eddy have upwelling in the cores therefore high in chlorophyll
- Eddies off the Bicol Shelf have low chlorophyll cores
- High chlorophyll waters is entrained by the eddy from the shelf

All eddies observed from images since 2003-2007 are always west of the shelf promontory at 124°E and always move westward
- Suggested generation mechanism – eddy formed in lee of promontory when Kuroshio flows near the shelf break and separates from the shelf at the promontory
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Summary and Conclusions

- Chlorophyll distributions in the Northern Bicol Shelf show interesting mechanism interaction of Kuroshio with shelf.
- Promontory on shelf margin steers Kuroshio away from shelf, creating lee eddies which travel westward.
- Eddies are always cyclonic and have low chlorophyll cores.
- Chlorophyll margins of eddies probably entrained water from the shelf – May be important mechanism for increasing productivity of waters northwest of shelf.

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