

Interactive
Comment

Interactive comment on “Phytoplankton blooms induced/sustained by cyclonic eddies during the Indian Ocean Dipole event of 1997 along the southern coasts of Java and Sumatra” by P. Rahul Chand Reddy and P. S. Salvekar

P. Rahul Chand Reddy and P. S. Salvekar

Received and published: 26 November 2008

I would like to thank the referee for comments offered upon careful review of my paper. I would like to answer the comments that have been raised by the reviewer. I would like to bring the Figures 1(a),2(a) and 3(a) into focus again, primarily on closer examination it can be noticed that the chlorophyll blooms extend well into the open ocean. In Figure 1a, the bloom is spread over a large area 85E-100E; 2N-10S, this region is definitely away from the coasts of Sumatra and is well into the open ocean of the equatorial east Indian Ocean. The latitudinal and longitudinal spread of the bloom persists along same area in figure 2.a while in figure 3.a the magnitudes are lesser, as already reported in

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



the paper. It is also confirmative that the region of the eddies is infact co-located with the bloom domain. The paper tries to throw up an idea on the process involved in upwelling, i.e the method by which upwelling occurs. Upwelling is definitely a process, but this process is brought about through the eddy phenomena. I agree to the fact that the eddies are not precisely located, but this is a considerable, since the ECCO model is not a biological model (as also mentioned in the paper). However the simulations of the ECCO model along the equator have been proven to be very significant in many studies, especially in resolving meso-scale eddies (Rahul et al., 2004, etc). The latitudinal resolution is 1/3 of a degree and the longitudinal resolution is 1 degree, which is also precise enough to resolve meso-scale eddies. As suggested by you the results have been compared with the observational data sets and have been found to agreement with those reported in my paper. Also, specifically, the SST and SSH anomalies (along the Java and Sumtra coast) derived from 40-year observational data sets plotted in the seminal papers (Saji et al, 1999 and Webster et al., 1999, that reported the Indian Ocean Dipole phenomena) show similar extent of the spread into the open equatorial eastern Indian ocean.

I hope that with the reasons cited above, you would recommend my paper for publication. The syntax and English corrections you had suggested have also been included the paper, which would feature in the revised version of the paper.

References quoted:

Rahul Chand Reddy, P., Salvekar, P. S., Deo, A. A., and Ganer, D. W.: Westward propagating Twin Gyres in the Equatorial Indian Ocean, *Geophys. Res. Lett.*, 31, L01304, doi:10.1029/2003GL018615, 2004.

Saji, N. H., Goswami, B. N., Vinayachandran, P. N., and Yamagata, T. A: Dipole mode in the tropical Indian Ocean, *Nature*, 401, 360-363, 1999.

Webster, P. J., Moore, A. M., Loschnigg, J. P., and Leben, R. R.: Coupled ocean-atmosphere dynamics in the Indian Ocean during 1997-98, *Nature*, 401, 356-360,

1999.

Interactive comment on Biogeosciences Discuss., 5, 3905, 2008.

BGD

5, S2296–S2298, 2008

Interactive
Comment

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

S2298

