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Ocean Science Discussions

Interactive comment on "North Indian Ocean variability during the Indian Ocean dipole" *by* J. Brown et al.

Anonymous Referee #3

Received and published: 18 July 2008

Since the IOD is an important climate phenomenon, new findings with new model would be very useful. The numerical models with the data assimilation in this paper would be a promising tool. In addition, the statistical techniques in this paper are careful enough.

However, the subjects dealt in this paper have been already discussed in the past studies, and the conclusions are not particularly novel. Therefore, the authors should review the existing studies more carefully, and discuss what are new in this paper more clearly.

Specific Comments

(1) The word "North Indian Ocean" is used in the title and throughout this paper. How-

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ever, it seems not adequate since the tropical region including the southern hemisphere is studied in this paper.

(2) Section 3 "the IOD also affects the inhabitants of the region"

References are necessary.

(3) Section 3.1 "DMI was developed by Vinayachandran et al. (2002)"

DMI was first defined by Saji et al. (1999) Saji, N. H., B. N. Goswami, P. N. Vinayachandran, and T. Yamagata (1999), A dipole mode in the tropical Indian Ocean, Nature, 401(6751), 360-363

(4) Section 4.2

The thermocline variability in the IOD was extensively discussed by Rao et al. (2002). The authors should discuss this paper.

Rao, S. A., S. K. Behera, Y. Masumoto, and T. Yamagata (2002), Interannual variability in the subsurface tropical Indian Ocean with a special emphasis on the Indian Ocean Dipole, Deep-Sea Res. II, 49, 1549-1572

(5) Section 4.3

Again, important literatures are missing. For example

Han, W. Q., T. Shinoda, L. L. Fu, and J. P. McCreary (2006), Impact of atmospheric intraseasonal oscillations on the Indian Ocean dipole during the 1990s, Journal of Physical Oceanography, 36(4), 670-690

(6) Section 5.3 "The effect of this event on the DMI is discussed in Sect. 6"

Where?

(7) Section 5.4 Page 228 line 11 "wind-driven summer currents (green line in Fig 20) which are eastward flowing"

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westward flowing?.

Technical comments

(8) Section 5.2 line 3-4

Replace Figure 15 with Figure 14 and Fig. 14 with Fig. 15.

(9) Section 5.3 line 4

Replace Figure 17 with Figure 16 and Fig. 16 with Fig. 17

(10) Section 5.4 Page 228 line 21

"FigS" Figs

Interactive comment on Ocean Sci. Discuss., 5, 213, 2008.