

Indian Ocean Dipole modulated wave climate of eastern Arabian Sea**Anoop, T.R. et al**

The authors investigate wave climate in the Arabian Sea and find that this climate is correlated with the Indian Ocean Dipole (IOD). Hence, there is an inter-annual component within the time series of wave height and wind speed. The analysis is carried using a combination of measured and model data. Wind and wave climate is, at present, an area of significant interest and this paper is a useful addition. I recommend publication, subject to the authors addressing the issues raised below.

1. The review section does not mention the very extensive wind and wave climate studies which have been undertaken using satellite data. These are particularly relevant to this study area. I suggest that the following references are included and discussed.
Young (1994) – the first global study of wave climate from satellite measurements.
Zieger et al (2014) – a study of trends in wind speed and wave height with a focus on particular regions, including the Arabian Sea.
2. If the climate is linked to the IOD, as noted, it means that the waves are largely locally generated and, hence, remotely generated swell is small. The authors should note this fact. Perhaps a reference to Young et al (2013) would be useful as this paper looks at the decay rates of swell.
3. The authors use a blended dataset consisting of ERA-40 for the period 1958-1978 and ERA-Interim for the period 1979-2014. The differences between these datasets have been widely reported. What impact does this have on the analysis? Is there a discontinuity in the time series in 1978/79?
4. In the model analysis the authors use WAVEWATCH in deep water and SWAN in finite depth water. These models have different wave generation and dissipation source terms. Does this inconsistency cause any issues? It is probable that wave generation is not an issue as the domains used for SWAN are small and hence only shallow water transformation may be significant.
5. The model validation shown in Figure 2 is only for a period of 1 month. Why do the authors not include statistics for a longer period (at least 1 year)?

References:

Young, I.R., 1994, "Global Ocean Wave Statistics Obtained from Satellite Observations", *Applied Ocean Research*, 16, 235-248.

Young, I.R., Babanin, A.V. and Zieger, S., 2013, "The decay rate of ocean swell observed by altimeter", *J. Phys. Oceanogr.*, 43, 2322-2333, doi: 10.1175/JPO-D-13-083.1.

Zieger, S., Babanin, A.V. and Young, I.R., 2014, "Changes in ocean surface winds with a focus on trends of regional and monthly mean values", *Deep Sea Res. Part 1*, 86, 56-67.
doi:10.1016/j.dsr.2014.01.004.