

## **Local and Remote Wind Forcing of the Eastern Boundary Current at Intra-Seasonal Frequencies in the Arabian Sea**

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Circulation in the North Indian Ocean is known to be strongly influenced by remote wind forcing. An example is a seasonal northward current along the eastern boundary of the Arabian Sea that moves against local winds during the winter monsoon and has been shown to be driven primarily by collapse of the summer monsoon (June-September) winds. Such inferences have been primarily based on data on ship-drifts, hydrography, and numerical experiments with seasonal winds. Here we present data on measurements with currents meters, sea level and winds for a month during March-April 2003. The data show that the sea level, winds, and de-tided currents, while showing influence of local winds, also had significant contribution from currents forced remotely. The sub-tidal sea level and current were linked geostrophically. All the three (currents, winds, and coastal sea level) showed variability ranging from days to weeks. To understand the roles of local and remote forcing in the data at intra-seasonal frequencies, we carry out numerical experiments with a reduced-gravity ocean model. Our inference is that at periods longer than about a month, contribution of remote forcing to the observed current is large. Frictional dissipation of remotely forced short waves increases the importance of local forcing, which is dominated by winds having periods from days to couple of weeks.