



## Abstract View

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## Near-Surface Meanders in the Equatorial Indian Ocean

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### ABSTRACT

Drifting buoys were released in the western Indian Ocean from 1979 to 1982. They reveal meanders of the eastward flowing monsoon drift in August–September 1979, 1980 and 1981. Oscillating meridional buoy drifts reach 80 cm s<sup>-1</sup> and meridional displacements can exceed 3° for motions at a period close to 25 days. In 1979, this is related to oscillation below the thermocline, sensed by an array of current meters in the western equatorial Indian Ocean. It is likely that the origin of the oscillations is in the surface currents north of the equator.

The currents change in October with the formation of an intense eastward equatorial current in which most of the buoys are entrained. As the buoys drift rapidly towards the eastern Indian Ocean, meridional motions are still present but at shorter periods (12 days) than is observed below the thermocline (25 days). It is possible that is still a manifestation of the same oscillations, but with Doppler shifting and a strong influence of nonlinearities. Waves at 25 days are found in the three oceans. Significant differences in the circulation of relevance for the waves are a more intense seasonal cycle of the currents in the Indian Ocean with predominantly eastward currents near the equator and the presence of the waves in the western portion of the Ocean where a very intense varying circulation is found in the proximity of the Somali Coast during the summer monsoon.

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