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Equatorial Atlantic Velocity and Temperature Observations: February–November 1981

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ABSTRACT

Upper ocean velocity and temperature measurements were obtained in the central equatorial Atlantic using surface moored current meters from February to November 1981. Distinct seasonal variations were observed in the zonal momentum and temperature on the equator of both the surface South Equatorial Current (SEC) and the subsurface Equatorial Undercurrent (EUC). After initially intensifying during boreal spring the SEC halted abruptly in early summer and the signature associated with this change progressed. At the observational depth of 100 m both speed and temperature increased during early summer with eastward progression and then decreased in fall. Higher frequency motions were also modulated by the seasonal cycle. Notable were the 2–3 week time scale oscillations of the meridional velocity component which appeared most energetically during the summer and fall seasons. Oscillations generally tended to be anisotropic and inhomogeneous. Vertical advection of zonal momentum was an important term in the momentum balance of the zonal velocity component fluctuations.

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