



## Abstract View

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# Dynamics of Seasonal and Intraseasonal Variability in the Eastern Equatorial Pacific

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### ABSTRACT

Time series measurements from surface moored buoys in the eastern equatorial Pacific are analyzed for the period 1983–86. The data, collected as part of the EPOCS and TROPIC HEAT programs, consist of currents, temperatures, and winds on the equator at 110°, 124.5° and 140°W. The purpose is to examine the dynamics of seasonal and intraseasonal variability in the upper 250 m from a diagnosis of the depth integrated zonal momentum (i.e., transport) equation.

The principal conclusions of this paper are that 1) there is an approximate balance between mean zonal wind stress and depth integrated pressure gradient; nonlinear advection is significantly nonzero however and leads to an enhancement of eastward transport along the equator, 2) there is an interannual change in zonal wind stress and pressure gradient in which both approximately double over the record length; 3) at the annual cycle, zonal wind stress and depth integrated pressure gradient tend to balance, though the uncertainties are large and other physical processes (e.g., lateral diffusion) are likely to be important; and 4) there exists a very energetic intraseasonal eastward propagating Kelvin-like wave in zonal current, temperature, and dynamic height at periods of 60–90 days which is poorly correlated with the local winds. These waves have amplitudes that are large enough at times to obscure the annual cycle.

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