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**The Tropically Enhanced Instability of Oceanic Western Boundary Currents** CHRISTOPHER EDWARDS, University of California, Santa Cruz, JOSEPH PEDLOSKY, Woods Hole Oceanographic Institution — A linear stability analysis of the shallow-water system in the tropical ocean examines the stability of the western boundary current and its latitudinal dependence. Despite a highly idealized formulation that assumes a purely meridional basic state and makes a local f-plane approximation, the stability analysis successfully predicts a length scale of the disturbance, a latitude for its origin, and a critical Reynolds number that agree well with accompanying numerical results. Realistic western boundary current profiles undergo a horizontal shear instability that is partially stabilized by viscosity. Calculations of the growth rate at several latitudes indicate that the instability is enhanced in the Tropics where the internal deformation radius is a maximum.

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