

Air-sea Coupling of the Tropical Instability Waves

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The Tropical Instability Waves (TIW) have been studied as the temperature front of the equatorial cold tongue in the Pacific; they propagate westward with a period of about 30 days and a wavelength of 1100 km. TIW were clearly observed by the radar scatterometer SeaWinds, the radiometer on TRMM, and the altimeter on Topex/Poseidon. A temporal and spatial filter was applied to isolate the waves. The differences in phase between various pairs of parameters, including wind vector, sea level, sea surface temperature, and atmospheric water vapor, are used to check various hypotheses in ocean-atmosphere coupling.