

High-resolution observations of mesospheric layers with the Jicamarca VHF radar

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The 50-MHz Jicamarca radar in Peru (12 S, 77 W) is able to observe backscatter from the daytime mesosphere on any given day; however the operation in this high-power mode is only possible during few days per year. For 2005 and 2006 a two-year campaign is carried out to study the seasonal variations of the wind field, echo structure, and turbulence by allocating 3 days of observations near each solstice and equinox. Doppler spectra are obtained with 1 minute and 150 meter resolution. Besides measurements of the horizontal and vertical wind components and the spectral width, the combination of MST and ISR modes allows the calculation of absolute reflectivity for the four beams. We present an overview of the results with focus on the observation of large Kelvin-Helmholtz billows found typically in the upper region around 80 km.