

SHORT TIME VARIATIONS OF DIURNAL TIDES ASSOCIATED WITH NONLINEAR INTERACTIONS WITH PLANETARY WAVES IN THE MLT REGION AT 7.4°S

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Neutral winds obtained by meteor radar have been used to study the dynamics of the equatorial MLT region. In this paper we have used the wind measurements obtained from August 2004 to December 2006 over São João do Cariri (7.4° S, 36.5° W), Brazil. The winds show long-term variations months as well as short time fluctuations on time scales of few days. The spectral analysis of the hourly wind series, besides presenting strong diurnal and semidiurnal power, also shows distinct power spectrum with peaks associated with low-frequency oscillations (2, 5, 6-7, 10, 16 day periods). Series of amplitudes of the tidal components were obtained and also showed periodic variability, which are associated with planetary wave occurrence with the same periods as the wind amplitudes. This association has been investigated and is discussed in terms of the proposed non-linear interaction between tides and planetary waves.

Diurnal tides, Mesospheric Dynamics, Nonlinear interactions

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