

Space Studies of the Upper Atmospheres of the Earth and Planets including Reference Atmospheres (C)
Recent Advances in Equatorial, Low- and Mid-Latitude Mesosphere, Thermosphere and Ionosphere Studies (C1.1)

LUNAR TIDE IN THE METEOR HEIGHTS OBSERVED IN BRAZIL

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Horizontal winds, measured by three meteor radars, have been used to study the atmospheric lunar tide in equatorial, tropical and sub-tropical latitudes in Brazil. Meteor radar data from three stations, São João do Cariri (7.4° S; 36.5° W), Santa Maria (29.7° S; 53.8° W), from January 2005 to December 2009, and Cachoeira Paulista (22.7° S; 45.0° W) from January 2000 to October 2008 have been used. Monthly tidal amplitudes and phases were determined using hourly mean winds in seven layers of four kilometer thickness each, centered in 81, 84, 87, 90, 93, 96 and 99 km of height. Most of the amplitudes and phases profiles of the lunar tide showed characteristics of vertically propagating waves in the atmosphere. Over São João do Cariri, during almost all year, the amplitudes of the meridional component were greater than the zonal one, and the phases presented equatorial characteristics of Southern Hemisphere. Over Cachoeira Paulista, the mean amplitudes were greater in meridional component and the phases also presented characteristics of Southern Hemisphere. Santa Maria presented meridional amplitudes greater than zonal between November and April. Some comparisons with a theoretical model have also been done.