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PLANETARY WAVE ACTIVITY OBSERVED IN TROPICAL MESOSPHERE DURING ANTARCTIC STRATOSPHERIC WARMING OF 2019

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In this study, we have investigated the planetary wave activity at São João do Cariri (7.4°S, 36.5°W) and Cachoeira Paulista (22.7°S, 45.0°W), Brazil, during Antarctic Stratospheric Warming of 2019. The vertical structures of zonal winds in the upper mesosphere and lower thermosphere (MLT) region exhibits a sequence of westward and eastward shifts, that are amplified during September, indicating that MLT dynamic of the tropical sector in the southern hemisphere have experienced departures due to wave disturbances at both sites. The wavelet spectra of the MLT zonal winds shown distinct oscillations from August to 31 October 2019, which shows spectral energy for periods of quasi 16, 10 and 5-6 days, at both sites. Diurnal and semidiurnal tides show modulation for periods of almost 10 and 5-6 days during stratospheric warming, mainly at São João do Cariri, suggesting interaction among tidal modes and planetary waves.