

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)

LONG-TERM OBSERVATION OF MESOSPHERIC FRONTS IN THE BRAZILIAN EQUATORIAL REGION

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Using an airglow all sky imager deployed at São João do Cariri (7.4°S , 36.5°W), mesospheric fronts were observed from September 2011 to June 2021 covering almost one solar cycle. Most of the observed fronts propagated to the northeast producing a well defined anisotropy in the propagation direction. It suggests that either the filtering process produced mainly by the wind system is acting blocking the propagation of the front from other directions or the likely sources of the fronts must be located in the west part of the observatory. Additionally, a well defined seasonality in the occurrence of the front was also observed with the maximum occurrence around the southern spring, which is in agreement with the occurrence of other kinds of gravity waves observed previously at the same site. Other relevant aspects of the front were investigated, such as the presence of trailing waves following the front and the appearance of ripples when the front is crossing the field of view of the imager.