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Solar activity influence on the interaction between the lower equatorial ionosphere and the middle atmosphere according to rocket sounding

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This paper examines simultaneous rocket soundings of the middle atmosphere and the lower ionosphere at the rocket testing ground Thumba (8 N, 77 E, India). The analysis of temperature variations at different altitudes (30, near 50 and 75 km) and wind components at altitudes of 30, 50, and 60 km between 1979 and 1988 are considered. The predominant influence of solar activity on the higher mesosphere as on temperature (altitude 75 km) and on the electron content (at heights above 77 km) is shown. Also in this paper the electron concentration variations at different altitudes (from 55 km to 82 km) are presented, together with the analysis of these variations with their depending on various heliogeophysical parameteres. These results allow us to expand our understanding about the influence of solar activity in an equatorial zone.