

# Temperature Variability in the Low- and Middle Latitudes Mesosphere in Winter

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Temperature observations in the upper mesosphere at 70-90 km height from the Equator to Northern mid-latitudes during the November/February period are examined together with their coupling with circulation in the lower atmosphere. During this period the temperature field exhibits strong variability with a cold temperature anomaly accompanied by a strong variability in the wind field in the mesosphere/lower thermosphere region. These are caused by increased planetary wave activity and the onset of related stratospheric warming events. The study employs Rayleigh scattering temperatures from the WINDII/UARS satellite experiment, ground-based optical and wind observations from 1991 until 2004. The planetary wave perturbations observed during this period, like quasi 2-day, 5-day, 8-day and 16-day waves are also examined and discussed.