



## **Rayleigh Lidar Observations of Gravity Waves in the Middle Atmospheric Temperature over Gadanki (13.5N, 79.2E)**

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The middle atmospheric density and temperature structure is highly influenced by gravity waves, which are generated due to tropospheric convection, storms, wind shears and orographic effects such as airflow over mountains. These waves propagate through the stratosphere and mesosphere and dissipate their energy near the mesopause making important contributions to heat and momentum budget of the region. They play an important role in driving semiannual oscillation prevailing at those heights. Because of their influence on density and temperature, these waves can be studied using Rayleigh lidar techniques. The Rayleigh lidar (Nd:Yag) installed at NARL, Gadanki has been providing nocturnal temperature measurements in the altitude region 30-80 km since March 1998 subject to clear sky conditions. The long-term high resolution temperature data have been used to study climatology of high frequency of gravity waves. The results will be presented during the meeting.