

Investigation of Upper Atmospheric Waves and Plasma Depletion Using Optical Techniques

Speaker: Subarna Mondal (RA-II)

Abstract:

In recent decades, scientists have been chasing upper atmospheric waves (e.g., gravity waves, traveling ionospheric disturbances, etc) to advance next-generation coupled climate and weather prediction models. These waves play a key role in transporting energy and momentum from the lower to the upper atmosphere, impacting near-Earth space and atmospheric dynamics. Characterizing these waves and tracing their origins through both observational data and simulations is critical. In this talk, I will provide an overview of both active (LIDAR) and passive (e.g., airglow photometer, imager) remote sensing techniques used to study these waves, with a particular focus on their impact in the Mesosphere and Lower Thermosphere-Ionosphere (MLTI) region. Recent results from airglow observations will also be presented and discussed.