

An introduction to the Mesosphere Lower Thermosphere region

Ms. Jennifer A.

The Mesosphere Lower Thermosphere (MLT) is a critical region that is influenced by the Earth's weather systems as well as space weather phenomena. This presentation offers an introduction to the MLT region, emphasizing the key drivers of its dynamics and its coupling with both the lower and upper atmosphere. The coupling from below primarily occurs through the upward propagation of gravity waves and atmospheric tides, which transport energy and momentum from the lower atmosphere. Enhanced Joule heating and particle precipitation during geomagnetic disturbances are the main drivers that couple the MLT region with the atmosphere above it. In the presentation, I shall also discuss phenomena such as the airglow emissions and the Polar Mesospheric Clouds, which serve as subtle indicators of MLT variability and long-term climate change.