GRAVITY WAVE COUPLING INTO THE THERMOSPHERE AND IONOSPHERE UNDER VARYING SOLAR CONDITIONS

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It is well known that gravity waves (GWs) arising from various sources in the lower atmosphere readily penetrate into the mesosphere and lower thermosphere. More recent observations and theory indicate that only those GWs having larger spatial scales and relatively high frequencies also penetrate to much higher altitudes in the thermosphere and ionosphere (TI). The altitudes to which GWs penetrate, and the roles that they play in the TI are expected to be strongly dependent on the TI neutral densities, however, so these responses are likely to exhibit significant solar-cycle correlations. This talk will review the sources of GWs expected to reach the TI, the predicted variations of scales and frequencies with altitude, and the anticipated solar-cycle influences on their neutral and plasma effects.

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