

THE 8-HOUR TIDE IN THE MESOSPHERE AND LOWER THERMOSPHERE OVER MAUI (20.75°N, 156.43°W)

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Wind data collected by the Maui meteor radar (20.75°N, 156.43°W) are used to study the 8-hour tide in the mesosphere and lower thermosphere (MLT) region at a low-latitude station. The data set spans the time interval from 19 May 2002 to 24 May 2007. Our results show that the 8-hour tide is a regular and distinct feature over Maui. The meridional component of this wave is significantly larger than the zonal component. The meridional component exhibits a semiannual variation in amplitude, with peaks near the equinoxes, whereas the variation of the zonal component does not show this seasonal characteristic. The strongest wave motions mostly occur in the height range of 92–96 km near spring equinox (March) and at higher altitudes near autumn equinox (October). The vertical variations of 8-hour tidal phase at Maui indicate an upward wave energy flux. The vertical wavelengths are ≥ 54 km in equinox months.

8-hour tide, low-latitude, mesosphere and lower thermosphere

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