Study on the Momentum Flux of 5-6 Day Planetary Waves in the Mlt Region at Trivandrum During Different Seasons

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Three dimensional wind components derived using measurements from Skiymet Meteor wind radar (8.5º N, 77°E) during 2005-2007, are used to get the daily zonal (u), meridional (v) and vertical wind (w) information. Meteor trails detected in the zenith angles 10° to 30° are utilized to derive winds so that vertical wind information can be relatively more accurate. The early morning five hours of wind data on each day are averaged to get the daily u, v, w profiles for twenty days in each month covering various seasons. The spectral analysis of 20 days of wind data for each month could give the prominent periodicities present ; especially, 5-6 day planetary waves. From the reconstructed time series of u, v, and w, for prominent periodicity, the vertical flux of horizontal momentum (u'w', v'w') could be derived. The vertical fluxes of zonal momentum were computed from the temperature and zonal wind fluctuations also and were in good agreement with that computed from vertical wind fluctuations. The seasonal variation in the planetary wave propagation characteristics and momentum flux were studied in the light of back ground wind information