



Trends and climatic shifts in upper mesosphere/lower thermosphere planetary waves

Ch. Jacobi, P. Hoffmann, D. Kürschner, K. Fröhlich

University of Leipzig, Germany (jacobi@uni-leipzig.de / Fax: +49-341-97-32899)

Long-period oscillations in the period range of 2-30 days, interpreted as planetary wave (PW) signatures, have been analysed using daily upper mesosphere/lower thermosphere wind measurements near 90 km over Collm (52°N, 15°E) in the time interval 1980-2005. Strong interannual and interdecadal variability of PW are found. Since the 1990s, a tendency has been observed for larger zonal amplitudes compared to meridional ones, thus long-term trends are visible, which are positive in the zonal component, but negative in the meridional component. The change appears in a step-wise manner, so that a climatic shift is visible rather than a linear trend. The behaviour of the upper middle atmosphere winds shows connections to analysed wave changes in the stratosphere, which may be a hint at a coupling of the atmospheric layers through planetary waves.