Meteor radar observation of 6.5-day wave in the MLT region over Wuhan (30.5°N, 114.3°E)

Guo-ying Jiang(1,2,3), Jian-Gang Xiong (1), Wei-Xing Wan (1), Bai-Qi Ning (1), Li-Bo Liu (1)

(1) Institute of Geology and Geophysics, Chinese Academy of Sciences, P.R. China (2) Wuhan Institute of Physics and Mathematics, Chinese Academy of Sciences, P.R. China (3) Graduate School of Chinese Academy of Sciences, Beijing, P.R. China (guoying_j@sohu.com)

Data obtained from the meteor radar at Wuhan $(30.5^{\circ}N, 114.3^{\circ}E)$ from 20 February 2002 to 13 June 2005 have been used to investigate the 6.5-day wave in the MLT region (78 - 100 km). Lomb–Scargle periodgram analysis is used to study the temporal and special characteristics of this oscillation. The 6.5-day wave in the zonal wind is larger than that in the meridional part. Among the analyzed data length, the zonal 6.5-day wave motives intensively in 2002 and 2004, and the wave maximizes before and after the equinoxes. The maximal amplitude of the 6.5-day wave is about 19 m/s. The altitude region where the stronger wave appear is about 88 – 98 km. There exist the waves with periods near 4, 6.5 and 11 days during the April-May of 2004, when the 6.5-day wave is strong. May be, this phenomenon implies some inter-relations between these waves.