



Analysis of propagation Acoustic Gravity Waves in the ionosphere over the Czech Republic

Jaroslav Chum, Frantisek Hruska, Tereza Sindelarova, Jan Lastovicka, and Dalja Buresova
Institute of Atmospheric Physics, Upper Atmosphere, Prague 4, Czech Republic (jachu@ufa.cas.cz)

We investigate propagation of Acoustic Gravity Waves (AGW) over the Czech Republic using the five-point Continuous Doppler sounding system developed at the Institute of Atmospheric Physics AS CR (IAP). Ionospheric fluctuations related to the propagation of AGW are observed with various time delays on different Doppler sounding paths. Analysis of these time delays between different sounding points enables us to investigate horizontal propagation velocities of these waves in the ionosphere, including the direction of propagation. We also focused on a special class of AGWs that produce an S-shape in Doppler shift spectrograms. We analysed more than 100 cases and we conclude that the AGWs propagate with typical horizontal velocities from ~ 100 to ~ 200 m/s. Our statistical analysis proves that the north-south component of the propagation direction of AGWs has different sign in winter and in summer.