



The effect of moving cold fronts over Central Europe to the variability of the ionosphere

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Cold fronts represent well known source of atmospheric waves, (especially short and medium scale AGW - acoustic gravity waves), that are able to propagate up to the ionospheric heights. In our study we focus on the effects of the transitions of cold front over the region of Central Europe on the variations of the ionosphere. We concentrate on periods of low solar and geomagnetic activity. Neutral atmosphere data are compared with the wave-like oscillations in the E and F layer. Our tropospheric data comprise synoptic maps on of 500 hPa and 850 hPa geopotential heights. Within ionospheric data we search for variability that is linked to the tropospheric disturbances.

The ionospheric parameters (electron concentration and corresponding height) we analyse by the wavelet transform method. The Modern HF digisonde DPS-4 D (Digisonde Portable Sounder), which is in operation at the Pruhonice observatory (49.59 N; 14.33 E) of the Institute of Atmospheric Physics, Prague (IAP) since 2004, represents an excellent source of the ionospheric data for Central Europe. Pruhonice digisonde usually operates in standard mode – one ionogram and electron density profile $N(h)$ each 15 minutes. Besides that, data from several european stations of the digisonde world network (data from Juliusruhe, Chilton, Brusel, Roma and Tortosa digisonde stations) are included in the study.