First results of method of ionospheric radio waves absorption evaluation based on one ionogram of vertical sounding ionosonde

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The main idea of method is to replace the time-averaging of amplitudes reflected from an ionosphere signals, with frequency-averaging of some "amplitude factor". An amplitude factor is determined by taking operating heights for each frequency into account. Estimate algorithm can work in the conditions of the disturbed ionosphere. The main limiting factor is the size of the frequency range where a reflection from the same ionospheric layer exists. As a result, the usage of the method on frequencies of E layer in the morning and evening hours is comlicated when the layer is formed. Highly diffused reflections increase dispersion of the frequency series of absorption assessments if night layer F is used. Often, requirements for the frequency series of absorption assessments when used sporadic Es is not performed, but in the demonstrated period (May-June 2014) sufficient number of values recorded. Absorption assessments based on one digital ionogram using layers E, Es, day and night F is presented. Daily variations in the estimates of absorption based on available at the moment of sounding reflections of ionospheric layers are presented. Regularities of behavior of daily variations of estimates of absorption based on E and F reflections repeat the patterns of behavior of the absorption of radio waves defined by many researchers who had worked with the amplitude averaging method. Results of the analysis of possibilities of using this method for the calculation of ionospheric absorption of radio waves in general correspond the possibilities of absorption estimates by A1 (Rawer, K. Manual on ionospheric absorption measurements, WDCA, Rep. UAG-057, Boulder, - 1976.). Moscow ionospheric station data are used.