Estimating the size spectrum of lower ionosphere irregularities from oblique-sounding data

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Abstract

A procedure for reducing experimental ionospheric oblique-sounding data is considered. This procedure allows the size spectrum of scattering lower ionosphere irregularities and the rms value of the neutral wind to be estimated from the power spectrum of a scattered radio signal. The problem reduces to solving a Fredholm equation of the first kind; an empirical model of the scattered-signal spectrum is used for its reguiarization. The experimental data obtained on the mid-latitude Moscow-Kazan path in 1986-1990 are used to test its efficiency. The internal scale of turbulence in the E region of the ionosphere is estimated. Copyright © 1999 by MAHK "Hayka/Interperiodica".