

A PROCESSING OF PARTIAL RADIOREFLECTION SPACED RECEIVING DATA BY THE GENERALIZED CORRELATION ANALYSIS

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The generalized correlation analysis is a statistical method of a determination of an ionized media transversal moving velocity by observing spatial and temporal diffraction pattern changes on some closely spaced sensors. This method was designed for an exploration of ionospheric irregularities drift velocity by the cosmic radio source signal spaced receiving. It demonstrated high stability of output parameters on account of using a large quantity of approximation levels. Furthermore, the method has an important feature of a protection from different destabilizing factors. These peculiarities were a main reason of the method application to the partial radioreflexion spaced receiving data.

For the correlation analysis application it was necessary to account for the point source effect, which influence on a size and velocity of the diffraction pattern. Furthermore, it was also necessary to develop certain criteria of a reliable result selection on the base of efficient using the statistical method in the pseudo-steady approach.

Thus, the data of the observatory Tumanny (69.0°N , 35.7°E), that were obtained during 1999 summer were processed with the correlation analysis. The most of results of the transversal wind velocity were defined in the altitude range of 79 - 93 km.

An absolute value of the wind velocity vector predominatingly varies within the limits from 20 to 60 m/s. Moreover, the strong westerly and weak northerly wind velocity vector components prevail in the results for the period from 99.07.17 to 99.09.18. And a comparison of the results with the global empirical wind model revealed a good agreement.