



Investigation of the role of the Interplanetary Magnetic Field turbulence and the Solar Wind velocity on the rigidity spectrum of Forbush decreases of the Galactic Cosmic Ray intensity

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We develop three dimensional non stationary model of the Forbush decrease (Fd) of the galactic cosmic (GCR) intensity for the constant solar wind velocity and the stationary three dimensional model including the changeable solar wind velocity and corresponding interplanetary magnetic field (IMF) components found as a solution of the Maxwell's equations. We show that the results of the theoretical modeling are in good agreement with the experimental data. We show that the change of the theoretical rigidity spectrum during the Fd is generally observed only due to the increase of the IMF turbulence, and it does not depend on the level of convection of the GCR stream. We investigate the influence of the geometry of the turbulence region on the rigidity spectrum of the Fd.