Three dimensional model of the interplanetary magnetic field for the heliolongitudinal and heliolatitudinal dependent solar wind speed

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We present results of numerical solution of Maxwell's equations for three dimensional (3-D) heliosphere with the heliolongitudinal and heliolatitudinal dependent radial solar wind speed for minimum epoch of solar activity. We show that the obtained spatial distributions of B_r, B_φ and B_θ components of the interplanetary magnetic field (IMF) give a possibility to compose more realistic 3-D model of the Forbush effects and the 27-day variations of the galactic cosmic ray (GCR) intensity. Problem of intersections of the magnetic field lines is considered in case of interactions of the fast and slow streams of solar wind plasma. A possible creation of the heliolatitudinal component B_θ of the IMF near the helioequatorial region owing to existence of the heliolatitudinal component of the solar wind speed is discussed, as well.