



## **Maxwell's equations for the irregular heliolongitudinal solar wind velocity and consequences for the 27-day variation of the galactic cosmic ray intensity**

R. Modzelewska (1) and M.V. Alania (1,2)

(1) Institut of Math. and Physics, University of Podlasie, Siedlce, Poland (renatam@ap.siedlce.pl), (2) Institute of Geophysics, Georgian Academy of Sciences, Tbilisi, Georgia

We develop a three dimensional (3-D) model of the 27-day variation of the galactic cosmic ray (GCR) intensity taking into account the changeable solar wind velocity. System of Maxwell's equations was solved numerically taking into account irregular heliolongitudinal dependence of the radial component of the solar wind velocity corresponding to the experimental data. We show that the proposed model of the 27-day variation of the GCR intensity including the solutions of Maxwell's equations with the heliolongitudinal asymmetry of the solar wind velocity is more realistic and compatible with the experimental data.