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Monitoring and Forecasting of Radiation Hazard for Aircrafts from Galactic CR

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In the first we determine the dimension of Heliosphere (modulation region), radial diffusion coefficient and other parameters of convection-diffusion and drift mechanisms of cosmic ray (CR) long term variation in dependence of particles energy, level of solar activity (SA) and general solar magnetic field. This important information we obtain on the basis of CR and SA data in the past taking into account the theory of convection-diffusion and drift global modulation of galactic CR in the Heliosphere. By using these results and published regularly elsewhere predictions of expected SA variation we may made prediction of expected in near future long-term cosmic ray intensity variation. We introduce new nominations: integral multiplicity and coupling function for radiation dose inside aircraft caused by galactic CR. By the method of coupling functions we estimate the connection between CR intensity long-term variation and radiation hazard for aircrafts in dependence of altitude, geomagnetic cutoff rigidity and shielding inside aircraft. We show that by this way we may made monitoring and prediction of expected radiation hazard for any aircraft lines characterized by dependence from several parameters: altitude, cutoff rigidity, shielding. In this case become important also estimation of expected long-term changes in the planetary distribution of cutoff rigidities which also influenced on galactic CR intensity, and through CR – influenced on radiation hazard inside aircraft.