

On the possibility of solar activity forecast at invisible side of the Sun based on the measurements of cosmic ray current

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Abstract. The effect of quasistationary corotating plasma flow on the distribution of galactic cosmic rays at the Earth orbit is investigated. The cosmic ray current is directed from the Sun during the period when the active region moves on visible Sun. The current is directed to the Sun when the active region goes beyond the western limb. The averaged through solar rotation current has a component directed to the Sun. This indicates that the main matter outflow proceeds not in the equatorial plane. It is determined that the zone of wide plasma outflow measures approximately 180 degrees. (It can be associated with the model of a "stream-penetrating" jet with an opening angle 180 degrees.) The averaged over solar rotation value of the azimuth current was

obtained with the use of the global survey method during the periods of passing through active regions. The found bulk velocity is 270 km/s that corresponds to the rate of irregularity of magnetic field $F = 3D 0.2$ (it is the ratio between perpendicular and parallel diffusion coefficients). The examples when considerable cosmic-ray current component is directed to the Sun are given. They happen during the periods when a large number of chromospheric bursts occur at the western solar hemisphere. Therefore it is necessary to have additional information for reliable reconstruction of solar activity at the invisible side.