

Structure of cosmic ray currents

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Abstract. We classify three types of structures of cosmic-ray currents in the solar wind. They are identified based on the data of the world neutron monitor network and with the use of the global survey method. A few simple models are suggested to describe the observed structures and in particular to explain the moments at which the current changes its direction. These moments are associated with the crossing

discontinuities in the solar wind. Some peculiarities when the cosmic ray current is changing before the Earth enters the perturbed regions associated with the Forbush-decreases, magnetic storms, the boundaries of wide magnetic sectors are discussed.