



## **Interplanetary Magnetic Field Structure and Geomagnetic Storms during Solar Cycle 24**

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Interplanetary Magnetic Field (IMF) structure, determined by the solar magnetic field and its variability, is responsible for an essential part of the geomagnetic perturbations. IMF in the terrestrial orbital plane is structured into two or four sectors with opposite direction of the magnetic field, “away” and “towards” the Sun so that the Earth is passing through the opposite magnetic structures during a solar rotation (27 days). The magnetic structure of IMF is significantly varying during the 11-yr solar cycle.

This paper analyses the IMF sectors in the solar cycle 24 (2009 – 2014) and the geomagnetic variability induced by the sector boundaries. High speed streams of the solar wind coincident with sector boundaries are determined. Geomagnetic storms triggered by such complex heliospheric phenomena are analysed by their main phase morphology (structures) and the energy transferred from solar wind into the terrestrial magnetosphere during the these phases.