Geophysical Research Abstracts,
Vol. 11, EGU2009-8253, 2009
EGU General Assembly 2009

Ionospheric reflection of the magnetic activity described by the new index η

B. Dziak-Jankowska (1), I. Stanislawska (1), and T. Ernst (2)

(1) Space Research Centre, P.A.S., Warsaw, Poland, (bdziak@cbk.waw.pl), (2) Institute of Geophysics, P.A.S. , Warsaw, Poland

The ionosphere system is the result of acting an external and internal driving forces following in Solar-Terrestrial interaction. The temporal and spatial characteristics of the ionosphere are controlled by the physical processes driving by external and internal forces upon which the maintain of the system depend like composition, neutral wind, and electric fields. Ionospheric behaviour is well correlated with magnetic activity. Magnetic drivers are bringing essential energetic input to a ionosphere, so, synthetic information gathered in magnetic indices is often used. They presented the quantification of the ionospheric changes. A number of geomagnetic indices have been developed to facilitate the study of ionospheric activity. It is usually assumed that the external magnetic field inducing currents can be approximated by a plane wave vertically incident on the Earth's surface. Indices characterize irregular magnetic changes. One of the reason of the magnetic indices development is description of isolated phenomena. These are local, as well as global indices. The differences discovered in the external part of the vertical geomagnetic component point to the existence of local inhomogeneities in the magnetosphere or the ionosphere. Redistribution of the electron concentration in the lower part of ionosphere during quiet magnetic circumstances has been studied by means of the η magnetic index. Local ionospheric drifts has been shown and discussed.