AE-to-ASY H relationship under the different Dst levels

Goncharova M.Yu. (*Polar Geophysical Institute, Apatity 184209, Russia)*

Using hourly resolved data for 1984 - 1987 years the standard AE index is compared with manually derived non-standard ASY H index (with the symmetric disturbance field component left at each station). It appeared that under the low Dst, -20...0 nT, the AE – ASY H relationship is unidirectional: observing AE>500 nT one can expect the ASY H >30 nT, whereas the inverse is not true. In storm conditions, the Dst<-50 nT, the AE-ASY H relationship is getting reciprocal, with the AE/ASY H ratio keeping almost unvariable at 12...14 times during rather long period. It is also found that i)the high-to-low-latitude longitudinal asymmetry relationship depends strongly on the westward electrojet development; ii)the low-latitude longitudinal asymmetry has an AE and Dst-independent source; iii) partially the AE/ASY H ratio scattering is due to AE seasonal variation related to the polar cap illumination conditions, in agreement with Lyatsky et al., 2001.