# GEOMAGNETIC FIELD VARIATIONS AT MIDDLE LATITUDE FROM AGNETOSPHERRIC AND IONOSPHERIC SOURCES DURING STRONG MAGNETIC STORMS

YURI SUMARUK, Taras Sumaruk

Institute of Geophysics of the National Academy of Sciences of Ukraine, Lviv

At middle latitudes geomagnetic variations are generated by magnetospheric sources, such as, magnetopause currents (DCF), magnetospheric ring current (DR), tail currents (DT) and also auroral ionospheric currents (DP) and ionospheric $S_q$- current system. Powerful magnetic storms recorded at magnetic observatory “Lviv” were investigated. As zero level we used mean per correspondent month five international quiet days variations. DCF- variations were calculated by means of Mead model. Variations due magnetospheric ring and tail currents were calculated as $(D_{st}\text{-DCF})\bullet\cos\Phi$, where $\Phi$ is geomagnetic latitudes of the observatory. We believed that differences between absolute values of horisontal component and $(S_q+(D_{st}\text{-DCF})\bullet\cos\Phi)$ presents the variations generated by return current from auroral electrojets into middle latitudes when $D_{st}>-150$ nT and by auroral electrojets, when $D_{st}<-150$ nT. Interpretation of remainders and comparision to the changes of corrected AU and AL indices fulfilled..

Magnetic storms, electrojets, cuurent systems

Yuri Sumaruk, Institute of Geophysics NAS of Ukraine,81070, Lviv region, Javoriv district, Ivano-Frankovo city, Zalissia str, 32.Tel:+38(03259)3-34-00, email:sumar@mail,lviv.ua