Geophysical Research Abstracts,
Vol. 10, EGU2008-A-06538, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-06538
EGU General Assembly 2008

Do solar eclipses trigger counter equatorial electrojets ?

A. T. Tomás (1), H. Lühr (1), M. Rother (1), C. Manoj (2), N. Olsen (3), S. Watari (4)

(1) GeoForschungsZentrum Potsdam, Germany (tomas@gfz-potsdam.de), (2) National Geophysical Data Center, Boulder, Colorado, (3) Danish National Space Center, Copenhagen, Denmark, (4) National Institute of Information and Communications Technology, Japan

The occurrence of counter electrojets as a response of the equatorial electrojet to solar eclipses is studied in this work. We analyzed the magnetic field measurements obtained by three satellites, CHAMP, SAC-C and Ørsted and correlated them with ground-base observations during the eclipses. The observations show the formation of a counter electrojet in the wake of the eclipse, approximately one hour after the eclipse crosses the dip equator. We present the counter electrojet spatio-temporal characteristics and dependencies on local time, season, solar activity and lunar phase. We propose that thermospheric winds blowing towards the actual shadow region are responsible for the weakening or reversal of the equatorial electrojet.