

COMPARISON OF THE GEOMETRICAL AND MAGNETIC PARAMETERS OF PLASMA CLOUDS AND SHOCK WAVES OBTAINED WITH HELP OF ACE SPACECRAFT SENSORS AND GROUND BASED DETECTORS

N. Bostanjyan

Cosmic Ray Division of Yerevan Physics Institute, Yerevan 375036, Armenia.
bostan@crd1x5.yerphi.am/Fax: 374-1-352041

Using density and velocity time profiles of the solar wind, which were measured on the spacecraft ACE we demonstrate the possibility to separate passage of the shock waves from passage of the magnetic clouds, and consequently, to precisely estimate size and the strength of magnetic field for magnetized cloud and shock waves, causing strong geomagnetic storms. The magnitude of magnetic field on the shock waves estimated by this method equals to $(2 \div 4.5) \times 10^{-4}$ gauss. Obtained values are in good coincidence with values of direct ACE measurements and are ten-fold bigger compared estimates obtained by measuring of time profiles of Forbush decreases.