



Statistical analysis of measurements of whistler-mode chorus by Double Star and Cluster spacecraft

E. Macusova(1), O.Santolik(1), K. Yearby(2), N.Cornilleau-Wehrlin(3)

(1) Charles University, Faculty of Mathematics and Physics, Prague, Czech Republic and IAP/CAS, Prague, Czech Republic; (2) University of Sheffield, UK; (3) CETP/UVSQ, Vélizy, France

We use a large data base of whistler-mode chorus events measured by the STAFF wave instruments on board the Double Star TC-1 and Cluster spacecraft. The orbit of the TC-1 spacecraft is located close to the equatorial plane, nearly perpendicular to the plane of polar orbits of the four Cluster spacecraft. A combination of these orbits is useful for a better characterization of the chorus source region. We visually select chorus cases from the observed time-frequency spectrograms of ELF and VLF wave data recorded during the first two years of observations of the Double Star TC-1 spacecraft. Similarly, we select chorus cases from the data set obtained by the Cluster spacecraft during their first five years of operation. Using these lists of chorus events we calculate statistical properties of chorus wave intensity as a function of the McIlwain's L parameter, magnetic latitude and frequency. Higher intensities of magnetic field fluctuations are observed at higher L values, corresponding to sources located in the equatorial region at radial distances above 6-7 Earth radii.