Geophysical Research Abstracts
Vol. 12, EGU2010-2851, 2010
EGU General Assembly 2010

Type III radio bursts: STEREO/WAVES observations

Vratislav Krupar (1,2,3), Milan Maksimovic (1), Ondrej Santolik (3,2), and Baptiste Cecconi (1)

(1) Observatoire de Paris, LESIA, Meudon, France, (2) Charles University, Faculty of Mathematics and Physics, Prague, Czech Republic, (3) Institute of Atmospheric Physics, Prague, Czech Republic

Type III radio bursts are the most intense interplanetary radio waves observed in the solar wind. Electrostatic Langmuir waves (produced by field-aligned beams of fast electrons connected with coronal mass ejections and/or solar flares) are triggers of the type III radio bursts. The two STEREO spacecraft provide us with unique stereoscopic observations of the Sun. The S/WAVES instruments (the HFR receivers) measure all components of the electric field in a frequency range from 125 kHz up to 1975 kHz. It allows us to investigate directions of the wave vectors and estimate apparent source sizes as well. In this paper the Singular Value Decomposition method has been used as an effective tool for multi-component wave analysis. A statistical study (based on 80 events) of goniopolarimetric properties of the type III radio bursts will be presented. We have investigated a spatial distribution of their sources. We have also studied the apparent source sizes.