

TYPE III RADIO BURSTS OBSERVED BY STEREO/WAVES

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The STEREO/WAVES instrument consists of five radio receivers: LFR Lo (10-40 kHz), LFR Hi (40-160 kHz), HFR (0.125-16.075 MHz), FFR1 (50 MHz fixed frequency) and TDS (250,000 samples/second time series snapshots). The LFR and HFR receivers provide us with goniopolarimetric measurement of type III radio bursts connected with propagation of field aligned electron beams in the solar wind plasma. Type III radio bursts are among the most intense electromagnetic emissions in the interplanetary medium. We present our results on estimation of angular sizes of source regions of the type III emissions using a standard non-linear chi2 method. The singular value decomposition (SVD) method for multi-component propagation analysis of electromagnetic plasma waves has been used as a tool for robust and fast data processing. We have also implemented a ray tracing method to estimate properties of the sources and of the solar wind medium.

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