ID de Contribution: **18** Type: **Oral presentation**

Study of nonlinear processes occurring during type III solar radio bursts using electromagnetic waveform analysis

jeudi 29 février 2024 10:00 (15 minutes)

The study focuses on electromagnetic waves radiated by the Langmuir wave turbulence generated by electron beams in the solar wind and corona during type III solar radio bursts. The waveforms used for analysis are provided by 2D/3V large-scale and long-term Particle-In-Cell simulations. They allow us to highlight different nonlinear interaction processes between waves, such as the three-waves' electrostatic wave decay, for various plasma parameters as the ambient magnetic field, the ion-to-electron temperature ratio and the average level of the external random plasma density fluctuations. Hundreds of virtual satellites moving in the 2D simulation box and recording waveforms of electromagnetic fields and particle densities are modeled, in order to perform statistical studies. Plasma random density fluctuations are found to play a crucial role.

Astrophysics Field

Solar & Stellar Physics

Day constraints

Only available for the 28 and 29 February. 1st march is impossible to be present.

Auteur principal: POLANCO RODRIGUEZ, Francisco Javier (Laboratoire de Physique des Plasmas (LPP))

Co-auteurs: Mlle KRAFFT, Catherine (Laboratoire de Physique des Plasmas (LPP)); M. SAVOINI, Philippe (Laboratoire de Physique des Plasmas (LPP))

Orateur: POLANCO RODRIGUEZ, Francisco Javier (Laboratoire de Physique des Plasmas (LPP))

Classification de Session: Session 5