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Interplanetary density models as inferred from solar Type III bursts

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We report on the density models derived from spectral features of solar Type III bursts. They are generated by beams of electrons travelling outward from the Sun along open magnetic field lines. Electrons generate Langmuir waves at the plasma frequency along their ray paths through the corona and the interplanetary medium. A large frequency band is covered by the Type III bursts from several MHz down to few kHz. In this analysis, we consider the previous empirical density models proposed to describe the electron density in the interplanetary medium. We show that those models are mainly based on the analysis of Type III bursts generated in the interplanetary medium and observed by satellites (e.g. RAE, HELIOS, VOYAGER, ULYSSES,WIND). Those models are confronted to stereoscopic observations of Type III bursts recorded by WIND, ULYSSES and CASSINI spacecraft. We discuss the spatial evolution of the electron beam along the interplanetary medium where the trajectory is an Archimedean spiral. We show that the electron beams and the source locations are depending on the choose of the empirical density models.