Solar radio emission is studied for many decades and a large number of studies have been dedicated to metric radio emission originating from the low corona. It is generally accepted that solar radio emission observed at wavelengths below the metric range is produced by the coherent plasma emission mechanism. Fine structures seem to be an intrinsic part of solar radio emission and they are very important for understanding plasma processes in the solar medium. Extensive reporting and number of studies of the metric range fine structures were performed, but studies of fine structures in the interplanetary domain are quite rare. New and advanced ground-based radio imaging spectroscopic techniques (e.g. LOFAR, MWA, etc.,) and space-based observations (Wind/WAVES, STEREO/WAVES A & B, PSP, and SolO in the future) provide a unique opportunity to study radio fine structures observed all the way from metric to kilometric range.

Radio signatures of solar eruptive events, such as flares and CMEs, observed in the interplanetary space are mostly confined to type II (radio signatures of magneto-hydrodynamic shock waves), and type III bursts (electron beams propagating along open and quasi-open magnetic field lines). In this study, we have identified, and analyzed three types of fine structures present within the interplanetary radio bursts. Namely, the striae-like fine structures within type III bursts, continuum-like emission patches, and very slow drifting narrowband structures within type II radio bursts. Since space-based radio observations are limited to dynamic spectra, we use the novel radio triangulation technique employing direction finding measurements from stereoscopic spacecraft (Wind/WAVES, STEREO/WAVES A & B) to obtain the 3D position of the radio emission. The novelty of the technique is that it is not dependent on a density model and in turn can probe the plasma density in the triangulated radio source positions (Magdalenic et al. 2014). Results of the study show that locating the radio source helps not only to understand the generation mechanism of the fine structures but also the ambient plasma conditions such as e.g. electron density. We found that fine structures are associated with complex CME/shock wave structures which interact with the ambient magnetic field structures. We also discuss the possible relationship between the fine structures, the broadband emission they are part of, and the solar eruptive events they are associated with.
