

The 3D Analysis of The Heliosphere Using Interplanetary Scintillation and Thomson-scattering Observations

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Both interplanetary scintillation (IPS) and Thomson-scattering observations from the Air Force/NASA Solar Mass Ejection Imager (SMEI) allow a determination of velocity and density in the inner heliosphere and its forecast from remote-sensing heliospheric observations. Recent solar missions, such as Hinode, STEREO, and SDO, and modelling analysis using these data enhance our ability to measure detailed aspects of specific solar events, including their outflow, and three-dimensional structure. Our current success in this endeavour includes the analysis of heliospheric structures also measured in-situ; interplanetary Coronal Mass Ejections (CMEs), shocks, solar co-rotating structures, and the energy transport provided by solar wind plasma throughout the heliosphere. This presentation will highlight a portion of the work on this multi-faceted topic.