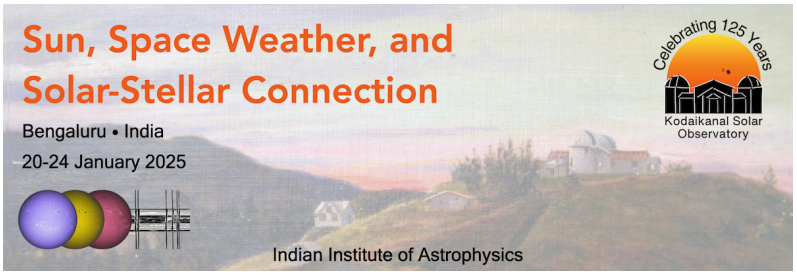

Contribution ID: **92** Type: **Poster**

Investigations on Suprathermal Ions in the Interplanetary Medium Using STEPS/ASPEX Measurements from Aditya L1

The whole heliosphere is permeated by the solar wind. An important aspect of the solar wind is the suprathermal ion tail which is manifested in the form of particles in the energy range of a few keV/nucleon to several hundreds of keV/nucleon. In addition to the suprathermal ions, there are energetic ions having energy range exceeding 1 MeV/nucleon which are termed as solar energetic particles (SEPs). Suprathermal particles are ubiquitous in the heliosphere and are continuously observed to arrive at the spacecraft location from multi-directions in the interplanetary medium. Determination of the sources of these particles remains a challenging task till date. The fluxes of these ions get enhanced during the passage of Stream Interaction Regions (SIRs) and Interplanetary Coronal Mass Ejections (ICMEs) events. The exact acceleration mechanism/(s) of suprathermal particles in the interplanetary medium are not well understood till date. In earlier works, "universal"spectral index of -1.5 (in differential directional flux vs. energy approach) of suprathermal particles during quiet (in the absence of transient events) times was proposed. However, a few recent studies have shown that spectral indices of suprathermal particles substantially deviate from the "universal"spectral index even during quiet times. This indicates that there may be several processes involved in the energization and modulation of quiet time suprathermal particles. Multidirectional measurements may be useful to understand these aspects. In this work, multi-directional suprathermal fluxes obtained from Supra-Thermal and Energetic Particle Spectrometer (STEPS) instrument of Aditya Solar Wind Particle Experiment (ASPEX) payload on board Aditya L1 spacecraft during quiet periods are analysed. The analysis reveals significant variations in spectral indices in different directions. These results will be discussed.

Contribution Type

Theme

Connecting Solar Corona to Heliosphere

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Session Classification: Poster Session-II / Coffee Break