

Contributed Talk

Splinter Plasma

ORIGINS OF  $^3\text{He}$ -RICH SOLAR ENERGETIC PARTICLES

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Particle acceleration in solar or stellar flares remains an outstanding problem in astrophysics. Solar flare energetic particles are characterized by a peculiar chemical composition with the rare elements like  $^3\text{He}$  or ultra-heavy ions enhanced by factors up to ten thousand above their thermal abundances. Such huge fractionation is unknown in any other site in the Universe. The solar sources of these events have been commonly associated with coronal jets, believed to be a signature of magnetic reconnection involving field lines open to interplanetary space. With the improved resolution of extreme ultraviolet imaging observations, the  $^3\text{He}$ -rich sources have been systematically analyzed in the last decade. Alongside with a modeling effort, which now focuses on various ion species, significant progress has been achieved in the understanding of the phenomena. Observational predictions of various models of ion acceleration in solar flares are discussed.