

Solar Energetic Particles, Solar Modulation and Space Radiation: New opportunities in the AMS Era #3

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The Third class of Solar Energetic Particles

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In this presentation, we introduce our recent research results about the solar energetic particles (SEPs), including a basic introduction. Particularly, we discuss on the classification of SEPs. The conventional two classes of SEPs are sorted as impulsive events accelerated by reconnection process in the flaring site and gradual events accelerated in the CME-driven shock. However, in the point of view of their acceleration mechanisms and related solar eruption events, we are noticed that there are some events showing hybrid or mixed characteristics beyond the impulsive and gradual paradigms after we examine the SEPs evolution in the multi-channel observation by SOHO/ERNE. Based on this fact, we carefully suggest that there should be the third class of SEPs accelerated by reconnection not in the flaring site, but the higher regions, such as CME-CME interaction regions. Finally, we introduce on future projects and unresolved issues that need to be studied in the future.

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