

Multi-Spacecraft View of Solar Energetic Particle Events in Solar Cycle 24

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The fleet of spacecraft distributed through the inner heliosphere during solar cycle 24 offers us the opportunity to (i) analyze solar energetic particle (SEP) events from multiple vantage points, and (ii) assemble longitudinal distributions of SEP intensities. Particles from individual SEP events have been observed to extend over broad ranges of longitude, in some cases nearing a 360° span. Fits to the longitudinal distributions of SEP intensities give both an approximate picture of the longitudinal broadening of the SEP events and an insight into the mechanisms responsible for spreading SEPs in the inner heliosphere. One of the mechanisms proposed to explain the wide spread of SEP events invokes particle injection from inherently broad particle sources associated with CME-driven shocks. The extent of the pressure waves traveling in the lower corona and associated with the onset of CMEs has been suggested as an indication of the longitudinal spreading of the SEP events. We will discuss whether the extension of these waves provides a good proxy for the longitudinal span of SEP events.