

ARE THERE TWO CLASSES OF SOLAR ENERGETIC PARTICLE EVENTS?

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In the last ten years or so, studies of solar energetic particles have worked within a simple paradigm that there are two classes of events. In one class, particle acceleration is related to flare processes, most likely resulting from magnetic reconnection. The clearest signature of this flare process is the presence of a type III (fast-drift) radio burst. These particle events are supposedly not associated with coronal mass ejections (CMEs). In the second class of particle event, flares are thought to be irrelevant and all the particles are presumed to be accelerated at shocks driven by CMEs. We will discuss observations which suggest that there exists a continuum of event properties rather than two distinct classes. In particular, from a study of a small sample of flare particle events (observed by the ACE spacecraft) we find that about 50% were associated with CMEs. Furthermore, using radio observations from the Wind/WAVES experiment, we find that all events in a sample of recent particle events were preceded by a fast-drift burst, indicating that flare processes are also associated with these events.