



Origin of "Fast" 1 MeV Protons Following the 13 December 2006 Solar Energetic Particle Event

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During solar energetic-particle (SEP) events the GOES satellite particle detector registers low-energy (1-4 MeV) protons at about the same arrival time as high-energy protons (165-500 MeV). As the arrival time of 1 MeV protons following a SEP is about 4 hours compared to the 30 mins for high-energy protons, it is commonly believed that the low-energy proton signal is some artifact produced inside the particle detector by high-energy protons.

We would like to emphasize that there may be also physical reasons that can account for the arrival of low-energy protons. One possibility is energy loss of high-energy protons in the Earth's vicinity which can significantly lower the initial energy. Possible implications will be discussed at the Conference.

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