

Interpretation of Solar Flare Observations by Fermi-LAT and Other Instruments

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The Fermi Large Area Telescope (LAT) has detected more than 40 flares with significant flux above 100 MeV reaching to several GeV in some flares. Most of these flares are detected many hours after the impulsive phase and some of these flare last for occur behind the limb as determined by STEREO observations. These observations when combined with those from instruments on board other satellites such as RHESSI, SDO, STEREO and others have provided new insights and challenges on the radiation, transport and acceleration mechanisms. I will review these mechanisms and discuss how these observations allow us to determine whether the gamma-ray radiation is due to electron bremsstrahlung or decay of pions produced by accelerated ions, whether these particles are accelerated continuously in the low corona and/or in the CME driven shock, or promptly and stored for relatively long times in a high corona trap.

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