

Solar Energetic Particle Events with Protons above 500 MeV between 1995 and 2015 Measured with SOHO/EPHIN

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The Sun is an effective particle accelerator producing solar energetic particle (SEP) events during which particles up to several GeVs can be observed. Those events observed at Earth with the neutron monitor network are called ground level enhancements (GLEs). In this work, SEP events with protons accelerated to above 500 MeV have been identified using data from the Electron Proton Helium Instrument (EPHIN) aboard the Solar and Heliospheric Observatory (SOHO) between 1995 and 2015. The compiled list of 42 SEP events is discussed based on the fitted spectral slopes and absolute intensities with special emphasis on whether or not an event has been observed as GLE. Furthermore, a correlation between the derived intensity at 500 MeV and the observed increase in neutron monitor count rate has been found for a subset of events.

Primary author: KÜHL, Patrick (University of Kiel)

Co-authors: DRESING, Nina (IEAP, University of Kiel, Germany); Prof. HEBER, Bernd (University of Kiel); KLASSEN, Andreas (University of Kiel)

Presenter: KÜHL, Patrick (University of Kiel)

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