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The possible acceleration source of solar relativistic particles on 13 December 2006

Abstract content

In large solar energetic particle (SEP) event, the acceleration source of relativistic particles remains enigmatic. The main controversy focuses on acceleration occurring at shock driven by coronal mass ejections (CMEs) or in the active region producing flares. The ground level enhancement (GLE) event of 2006 December 13 offers excellent opportunity to extend our knowledge about the acceleration and transport process of solar energetic particles. From analysis of imaging data from TRACE, SOHO, and RHESSI, along with the data from neutron monitors, we find good correlation between the flare's eruptions and relativistic particles count rate. Moreover, the flare occurred almost at the well-connected region, it suggests that the main acceleration process probably occurred in the flare active region.

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Summary

Reference

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