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Relativistic solar cosmic ray events (1956-2006) from GLE modeling studies

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Abstract content

The modeling analysis of 15 large GLEs occurred in the period 1956-2006 on the data of the worldwide neutron monitors has been performed. In all studied cases two distinct RSP populations (components) were revealed: the early impulse-like intensity increase with exponential energy spectrum (prompt component, PC), and the late gradual increase with a softer energy spectrum of the power law form (delayed component, DC). The exponential spectrum may be an evidence of the acceleration by electric fields arisingin the reconnecting current sheets in the corona. The possible source of DC particles can be stochastic acceleration at the MHD turbulence in expanding flare plasma. The modeling analysis of pitch-angle distributions and anisotropy dynamics allows also studying effects of RSP propagation in the IMF.

If this papers is presented for a collaboration, please specify the collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 1 (SH), pages 253-256

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