



Contribution ID : 53

Type : **Poster**

Galactic Cosmic Ray Modulation in the Heliosphere at Solar Maximum

Monday, 9 July 2007 14:45 (0:00)

Abstract content

The spatial distribution of galactic cosmic rays in the heliosphere at solar maximum of Cycles 21, 22 and 23 are studied using a one dimensional model of the cosmic ray transport equation. We investigated the radial intensity gradients from 1 AU to the distant heliosphere and interpreted the data from IMP8, Voyagers 1/2, Pioneer 10 and balloon experiment BESS. In our model we considered three of the physical processes that affect the cosmic radiation: diffusion, convection and adiabatic energy loss. Our analysis indicates that adiabatic energy loss plays an important role in the radial distribution of galactic cosmic ray in the inner heliosphere, while in the outer region the diffusion and convection are the relevant processes.

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 567-570

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Session Classification : Posters 3 + Coffee

Track Classification : SH.3.3