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Solar modulation of cosmic ray proton related to observations by PAMELA from 2006 to 2014

The global features of solar modulation of galactic cosmic ray proton in the heliosphere are studied with a comprehensive three-dimensional numerical model and compared to proton observations made by PAMELA experiment from 2006 to 20014. The results of the numerical modelling and its comparison with observations give insight into how the elements of the diffusion and drift tensor change with time from solar minimum to solar maximum conditions. We find that, in order to fit PAMELA observations, the rigidity slope of the perpendicular mean free path below 4 GV increases from 2006 to 2014, while remaining almost constant above 4 GV. This study will provide better constraints on the magnitudes and rigidity slopes of the diffusion mean free paths at the Earth.

Apply to be considered for a student ; award (Yes / No)?

yes

Level for award;(Hons, MSc, PhD, N/A)?

MSc

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