

Time variations of the proton flux in Earth inner radiation belt during 23/24 solar cycles based on the PAMELA and the ARINA data.

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The PAMELA and the ARINA experiments are carried out on the board of satellite RESURS-DK1 since 2006. The main goal of the PAMELA instrument is measurements of high energy antiparticles in cosmic rays while the ARINA instrument is intended studying high energy charged particle bursts in the magnetosphere. Both of these experiments have a possibility to study trapped particles in the inner radiation belt. The complex of these two instruments covers proton energy range from 30 MeV up to trapping limit ($E \sim 2$ GeV). Continuous measurements with the PAMELA and the ARINA spectrometers include falling and rising phases of 23/24 solar cycles and the maximum of 24th one. In this report we present temporal profiles of proton flux in the inner zone of the radiation belt ($1.11 < L < 1.18$, $0.18 < B < 0.22$ G). Dependence of proton fluxes on a magnitude of the solar activity was studied for various phases of 23/24 solar cycles. It was shown that proton fluxes at the solar minimum are several times greater than at the solar maximum.

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