

SPECTRA OF ENERGETIC ELECTRONS IN THE SPACE: DEPENDENCE ON SOLAR ACT

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The work examines the dataset of the energetic (0.1-6.0 MeV) electron fluxes and spectra measured on the Prognoz 4-10, IMP 6-8, Ohzora, Soho, and Intercosmos 19 satellites during solar cycles 21-23. The energetic electrons are treated to originate mainly from the Galaxy, the Sun, Jupiter and (in some cases) from the Earth's magnetosphere. The differential electron energy spectra throughout different solar activity cycles and their variations during solar minima and maxima are analyzed. The reasons for the variations in the electron energy spectra are discussed.

Simultaneous measurements on near-Earth satellite IMP and Prognoz types showed, that the magnetosphere of Jupiter is a source of near to Earth electrons with energy > 0.3 MeV. The Earth magnetosphere serves a source of energetic electron fluxes. This phenomenon was determined with a help of measurements on anisotropy and asymmetry in fluxes on satellites Prognoz and Intercosmos series. During solar bursts considerable increasing in electron fluxes with small and middle energies can be observed in the space. Satellites Prognoz and Ohzora for example registered spectra of space electrons which originated from the Sun. Contribution of different sources into cumulative electron spectra in dependence on a level of the solar activity was estimated as a result of series of experiments on a number of satellites. On the basis of measurements on satellites Prognoz, IMP, Ohzora and Soho characteristics of fluxes and spectra of energetic electrons in dependence of solar activity were predicted for 23-rd cycle.