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The MONICA experiment for investigation of the cosmic ray ionic composition

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The description of the onboard experiment MONICA for study of the fluxes of cosmic ray energetic ions from H to Ni in the energy range 10-300 MeV/n in near-Earth space is presented. The MONICA main scientific goal is the measurement of the ion charge states, as well as elemental, isotope composition and energy spectra of Solar Energetic Particle (SEP) fluxes for individual SEP events, and study the evolution of these characteristics in time. The experiment MONICA will be able to investigate the ion and isotopic composition of Anomalous Cosmic Rays (ACR), Galactic Cosmic Rays (GCR), and the isotope fluxes in the Earth's inner zone. The observation of the ion fluxes will be carried out with high acceptance multilayer silicon telescope-spectrometer onboard the polar-orbiting satellite. The satellite orbit parameters (circular, altitude is about 600 km, polar) were chosen for the realization of the ion charge state measurement method based on using of the Earth magnetic field as a separator of the ion charge. This technique is unique possible for ion energies more than 10 MeV/n.

Presentation type

Section talk (10+5 min)

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