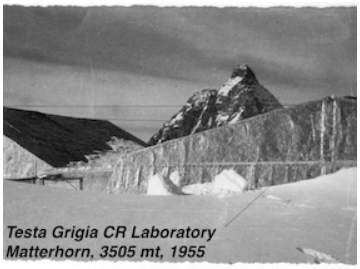

Contribution ID: **23** Type: **poster**

Model CRAC:EPII for atmospheric ionization due to precipitating electrons: Applications, parametrization and comparison with parametrization model

Tuesday, 6 September 2016 16:30 (1h 45m)

A new model of the family of CRAC models, CRAC:EPII (Cosmic Ray Atmospheric Cascade: Electron Precipitation Induced Ionization), is presented. The model calculates atmospheric ionization induced by precipitating electrons. The computations were carried out in the energy range of precipitating electrons between 20 keV and 500 MeV. The CRAC:EPII is based on Monte Carlo simulation: Compton scattering, generation of bremsstrahlung high-energy photons, photoionization, annihilation of positrons, and multiple scattering. The results from the simulations are given as look-up table representing the ionization yield function. The CRAC:EPII allows one to compute ionization due to precipitating electrons for a given altitude (up to 100 km) considering a given electron spectrum. The ionization yields is compared with an analytical parametrization for various energies of incident precipitating electron.

Primary author: ARTAMONOV, Anton (University of Oulu)

Co-authors: Dr MISHEV, Alexander (University of Oulu); Prof. USOSKIN, Ilya (University of Oulu)

Presenter: ARTAMONOV, Anton (University of Oulu)

Session Classification: Poster