

ATMOSPHERIC PROTON AND NEUTRON SPECTRA AT ENERGIES ABOVE 1 GEV.

V. A. Naumov (1,2) and T. S. Sinegovskaya (2)

(1) Dipartimento di Fisica and Sezione INFN di Ferrara, 44100 Ferrara, Italy,

(2) Irkutsk State University, Irkutsk, 664003 Russia.

We propose a simple and effective method for the solution of the transport equations for cosmic ray protons and neutrons in the Earth atmosphere. It is demonstrated that the nucleon absorption lengths are strongly energy and depth dependent due to the non-paw-law behavior of the primary spectrum, growth of the total inelastic cross sections with energy and scaling violation in the nucleon-nucleus interactions. The numerical results of the nucleons fluxes in the energy range 1 to 10^5 GeV are compared with the avialable experimental data.