Contribution ID: **44** Type: **Invited**

Physics of high energy atmospheric muons

Friday, 2 July 2010 12:15 (15 minutes)

In the first part of the talk the interesting new results of L3, MINOS and CMS collaborations are briefly discussed from theoretical point of view: an observational evidence of the rise in the muon charge ratio (L3 and MINOS data) at muon energies around 1 TeV and detailed studies of electromagnetic interactions of high energy muons (in a momentum range up to 1 TeV/c) in the medium of CMS detector. In the second part of the talk the recent calculations of atmospheric prompt lepton spectra are reviewed. The modern theoretical approaches to the problem of heavy quark production in high energy nucleon-nucleus interactions are briefly considered (color dipole formalism, saturation models). The recent new theoretical developments in the ancient problem of intrinsic charm are also discussed. The predictions for atmospheric muon spectrum in the region around 1 PeV (where the prompt muon contribution becomes to be dominant) are given.

Primary author: Prof. BUGAEV, Edgar (Institute for Nuclear Research)

Presenter: Prof. BUGAEV, Edgar (Institute for Nuclear Research)

Session Classification: Muons

Track Classification: Muons