



Contribution ID : 879

Type : **Poster**

EAS muon distribution at sea level and its relation with primary composition in the knee region of primary spectrum

Abstract content

The muon component of extensive air shower (EAS) initiated by primaries having energy in the knee region of energy-spectrum is studied by measuring their density (ρ_{μ}) for different threshold energies using the muon magnet-spectrographs ($m \sim 500$ GeV/c) of NBU air shower array. The lateral distribution of muons for different shower sizes and muon energies are obtained. In this paper we would be reporting the results of our investigation of various correlations between the EAS muon distribution and Shower size (N_e) and the Primary energy (E_0). Our measurements are compared with those reported by others from similar experiments. Furthermore, from muon distribution, the total muon content (N_{μ}) of each shower is estimated and thereby variation of muon-electron abundance (N_{μ}/N_e) with the primary energy is also studied. The comparative study of our measurements with simulated results of different authors using different primaries show significant indications of change in primary composition around knee.

If this papers is presented for a collaboration, please specify the collaboration

Summary

Reference

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Session Classification : Posters 1 + Coffee

Track Classification : HE.1.2.A