



Contribution ID : 971

Type : **Poster**

EAS size spectra and its relation with shower age and zenith angle

Abstract content

The measurements of electron density at different locations of shower front incident with different zenith angle (θ) from 0 to 60 degree, obtained by NBU Air Shower array (Latitude: 26 degree 42 min. North and Longitude: 88 degree 21 min. East and about 130 m above sea level), are studied to investigate correlation between lateral shower age (s) with atmospheric depth and electron size spectra of EAS in the size range $10^{4.6}$ to $10^{6.4}$ particles. It is observed that the variation of shower age with zenith angle (θ) is linear with increasing slope at higher shower sizes. Our estimated values of $ds(\theta)/dx$ is similar to that of other experiments. EAS size spectra for young ($s < 1.2$) and old showers ($s \geq 1.2$) as well as for low ($0 \text{ degree} \leq \theta \leq 30 \text{ degree}$) and high zenith angles ($30 \text{ degree} < \theta \leq 60 \text{ degree}$) are also studied. Our measurements show that young showers exhibit the knee feature while it is not evident for old showers. It is also observed that the knee position changes towards the lower value of N_e for higher atmospheric depth. The absence of knee for older showers may possibly indicate their origin from heavier primary with different knee position.

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

Summary

Reference

Primary author(s) : Mr. SARKAR, Samir Kumar (North Bengal University)

Co-author(s) : Dr. CHHETRI, Rabin (Sikkim Govt. College, Gangtok, Sikkim, India)

Presenter(s) : Dr. CHHETRI, Rabin (Sikkim Govt. College, Gangtok, Sikkim, India)

Session Classification : Posters 1 + Coffee

Track Classification : HE.1.1.A