



Contribution ID: 173

Type: POSTER

Average shape of longitudinal shower profiles measured at the Pierre Auger Observatory

Thursday, October 11, 2018 10:46 AM (3 minutes)

The average profiles of cosmic ray showers developing with traversed atmospheric depth are measured for the first time, with the Fluorescence Detectors at the Pierre Auger Observatory. The profile shapes are well reproduced by the Gaisser-Hillas parametrization, at the 1% level in a 500 g/cm² interval around the shower maximum, for cosmic rays with $\log(E/eV) > 17.8$. The results are quantified with two shape parameters, which are measured as a function of energy.

The average profiles carry information on the primary cosmic ray and its high energy hadronic interactions. The shape parameters predicted by the commonly used models are compatible with the measured ones within experimental uncertainties. These are dominated by systematic uncertainties which, at present, prevent a detailed composition analysis.

Primary author: ANDRINGA, Sofia (LIP)

Presenter: ANDRINGA, Sofia (LIP)

Session Classification: POSTER SESSION