



Contribution ID: 87

Type: poster

Missing energy estimate in the light of the muon discrepancy

The determination of the primary energy of extensive air showers using the fluorescence technique requires an estimation of the energy carried away by particles (muons, neutrinos) that do not deposit all their energy in the atmosphere. This estimation is typically made using Monte Carlo simulations and is thus dependent on the hadronic interaction model, specially on the predictions for neutrino and muon production. In this contribution we show a new method to obtain the missing energy directly from events measured simultaneously with the fluorescence and the surface detectors of the Pierre Auger Observatory. At 10 EeV, the average missing energy estimated with this method is more than 60% higher than the prediction from QGSJETII for protons. This result is compatible with the muon deficit in simulations of extensive air showers found by the Pierre Auger Collaboration (presented at this conference elsewhere)

Primary author: Dr TUEROS, Matias (Universidad de Santiago de Compostela)

Co-author: FOR THE PIERRE AUGER COLLABORATION, . (Pierre Auger Collaboration)

Presenter: Dr TUEROS, Matias (Universidad de Santiago de Compostela)