

Contribution ID: 72

Type: **not specified**

Indirect Measurements of High Energy Cosmic Rays –the Air-Shower Regime

Wednesday, 6 July 2016 09:00 (50 minutes)

Measurements relevant to the arrival direction distribution, the energy spectrum and the mass composition of cosmic rays above 1 PeV will be reviewed. Interpretation of raw data is affected, to a greater or lesser extent, by our lack of knowledge of key parameters of hadronic interactions: the limitations will be emphasised. Work at the Auger Observatory leads to the view that there is a problem with the prediction of the muon content of showers which appears to be confirmed by data from measurements made with the IceCube/IceTop arrangement. Two sets of evidence against the ankle feature at ~ 4 EeV being due to pair-production by photons on protons, that are only weakly model-dependent, will be discussed from which it seems improbably that the mass spectrum can be proton-dominated in the region near the ankle, as often claimed. There remain many unanswered questions and instruments under development to alleviate the situation will be briefly mentioned.

Primary author: WATSON, Alan (University of Leeds)

Presenter: WATSON, Alan (University of Leeds)

Session Classification: Indirect Measurements of High Energy Cosmic Rays