

ENERGY SPECTRUM ABOVE 4×10^{17} EV MEASURED BY THE HAVERAH PARK ARRAY

M. Ave, J.A. Hinton, J. Knapp, M. Marchesini and **A.A. Watson**

Department of Physics and Astronomy, University of Leeds, Leeds LS2 9JT, UK.

The relation between the ground-level parameter $\rho(600)$ (the water-Cerenkov density at 600 m from the core) and the primary energy was used to determine the energy of events recorded at the Haverah Park air shower detector. This relation was obtained through Monte-Carlo simulations by Hillas and using a very old hadronic model. Using Corsika code to simulate air showers and Geant to simulate the tank response, we provide a new conversion relation between $\rho(600)$ and the primary energy. Using this relationship, a new energy is assigned to the recorded events and a new parameterization of the cosmic ray flux above 4×10^{17} eV is obtained.