



Contribution ID : 67

Type : **Poster**

Background radiation measurement with Water Cherenkov Detectors

Tuesday, 4 May 2010 10:15 (1)

Water Cherenkov Detectors have the nice property of being mostly calorimeters for cosmic rays electrons and photons, while providing a clear signal for muons. At large energy deposited in the detector, they observe small extended air showers. This makes them interesting detectors to study the cosmic ray secondaries background.

Using background histograms of the total energy deposited in detectors, or low threshold scaler counters, one can follow the flux of cosmic rays on top of the atmosphere at various energies, and/or study atmospheric effects on the cosmic ray showers development.

Background data from the Pierre Auger Observatory will be presented, together with a reconstruction of the primary cosmic ray fluxes, showing modulation effects due to the Sun activity (Forbush decreases). Rapid changes in the background flux will be shown during the crossing of a storm over the 3000 km² of the Pierre Auger ground array.

Please indicate "poster" or "plenary" session. Final decision will be made by session coordinators.

plenary

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Session Classification : Poster Session 1 (Summary)

Track Classification : Cherenkov detectors in astroparticle physics