Contribution ID: **25** Type: **talk**

Particle Physics with the Pierre Auger Observatory: p-air cross section at $\sqrt{s} = 57$ TeV per nucleon

Tuesday, 17 September 2013 09:20 (18 minutes)

The Pierre Auger Observatory has measured the proton-air cross section for particle production at the CM energy per nucleon of 57 TeV using the extensive air showers produced when ultra-high energy (E > 1018:5 eV) protons smash Nitrogen and Oxygen nuclei at the top of Earth's atmosphere. We describe here the details of this measurement, with special attention to the systematics affecting it. A (model dependent) determination of the proton-proton inelastic cross section will also be presented together with a comparison with extrapolations from measurements done at LHC energies.

Primary author: MOURA SANTOS, Edivaldo (Universidade Federal do Rio de Janeiro)

Presenter: MOURA SANTOS, Edivaldo (Universidade Federal do Rio de Janeiro)

Session Classification: Working Group 4

Track Classification: Working Group 4