

# Measurements of the proton-air cross section with high energy cosmic ray experiments.

*Tuesday, 6 October 2015 12:55 (20 minutes)*

Detecting Ultra High Energies Cosmic Rays (UHECRs) enables us to measure the proton-air inelastic cross section  $\sigma_{p\text{-air}}^{\text{inel}}$  at energies that we are unable to access with particle accelerators. The proton-proton cross section  $\sigma_{p\text{-p}}$  is subsequently inferred from the proton-air cross section at these energies. UHECRs experiments have been reporting on the proton-air inelastic cross section starting with the Fly's Eye in 1984 at  $\sqrt{s} = 30\text{-TeV}$  and ending with the most recent result of the Telescope Array experiment at  $\sqrt{s} = 95\text{-TeV}$  in 2015. In this talk, I will present the methods and experimental results from some of these experiment.

**Primary author:** Dr ABBASI, Rasha (University of Utah)

**Presenter:** Dr ABBASI, Rasha (University of Utah)

**Session Classification:** Astroparticle Physics

**Track Classification:** Astroparticle Physics