Contribution ID: **180** Type: **Oral Presentation**

The Pierre Auger Observatory: challenges at the highest-energy frontier

Saturday 11 June 2011 11:30 (30 minutes)

The Pierre Auger Observatory explores the highest-energy Universe, through the detection of air showers induced by the most energetic cosmic rays, whose nature and origin remain enigmatic despite decades of study. Tremendous progress is being accomplished in measuring the characteristics of these messengers with unprecedented statistics. Their energy spectra, their arrival directions, and the properties of the cascades they initiate are studied in an attempt to elucidate their nature (mass composition, possibility of gamma-ray or neutrino primaries), provenance and propagation (sources, anisotropies, spectra). The scientific and technical challenges are extreme, and are addressed in a multiplicity of ways, including a program of enhancements to the base design of the Observatory. We will review these challenges, the solutions implemented and under way, and their impact on the rich science harvest reaped by the project.

Author: Prof. COUTU, Stephane (Penn State University)

Presenter: Prof. COUTU, Stephane (Penn State University)

Session Classification: Astrophysics and Space Instr.

Track Classification: Experimental Detector Systems