

Abstract Submitted  
for the APR10 Meeting of  
The American Physical Society

**Upper limit on the diffuse flux of UHE tau neutrinos** CLAUDIA FRACCHIOLLA, Colorado State University — The Pierre Auger Observatory is a cosmic ray hybrid detector located in the province of Mendoza in Argentina. Due to its design characteristics it allows us to study fundamental particle interactions at energies well beyond those available at colliders. The Auger Observatory is not only sensitive to high energy cosmic rays, but also to ultra-high energy neutrinos with energies above  $10^{18}$  eV (1EeV). Neutrinos are the perfect messengers from out of space, neutrally charged and interact only weakly, they can travel long distances without interacting. Therefore they can provide us information that other particles, especially charged particles, are not able to. In this talk I will present the evaluation of the sensitivity of Auger to the so-called “Earth-skimming” events, the procedure to discriminate them from background, and the upper limit on the diffuse flux of tau neutrinos obtained at EeV energies from Auger data.

Claudia Fracchiolla  
Colorado State University

Date submitted: 23 Oct 2009

Electronic form version 1.4