Contribution ID: **14** Type: **not specified**

Ultrahigh energy neutrinos at the Pierre Auger Observatory

Friday 24 May 2013 11:30 (25 minutes)

The Pierre Auger Observatory is the largest cosmic ray observatory in operation. It consists of the surface array, which detects secondary particles at ground level using water-Cherenkov tanks, and 27 fluorescence telescopes. Even though it was designed for cosmic ray physics, it is also sensitive to neutrinos of all flavors above 0.1 EeV. Neutrinos can produce observable air showers when they interact in the atmosphere or in the Earth's crust (in the case of tau neutrinos). With the surface array we can see these showers as very inclined showers produced close to the ground. These can be distinguished from showers initiated by cosmic rays using the time structure of signals in the water-Cherenkov tanks. No neutrino candidates have been found, which allows us to place competitive limits to the diffuse flux of neutrinos in the EeV range and above as well as limits on the flux from point-like sources.

Presenter: EBR, Jan (Institute of Physics, Prague)