

The Pierre Auger Observatory - Overview of ultra-high-energy neutrino searches

Friday 19 July 2024 15:30 (15 minutes)

The surface detector array of the Pierre Auger Observatory is sensitive to neutrinos of all flavors for primary neutrino energies above 0.1 EeV and zenith angles above 60° . During the 20 years of Auger operation, we put stringent limits on the existence of a diffuse flux of ultra-high-energy neutrinos and also on neutrino fluxes from point-like steady sources, including those of neutrinos detected in coincidence with gravitational wave events. We further severely constrain the secondary by-product fluxes expected from the decay of super-heavy dark matter particles in the Galactic halo. Finally, we also analyzed the monocular data from our Fluorescence Detector to search for upward-going tau-neutrino events consistent with the two “anomalous” radio pulses observed by the ANITA flights I and III. In this talk, we review our neutrino searches and present our prospects for the new neutrino triggers with AugerPrime, the major update of the Pierre Auger Observatory.

Alternate track

1. Astro-particle Physics and Cosmology

I read the instructions above

Yes

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