



Contribution ID: 32

Type: Oral Presentation

Ultrahigh-energy neutrino events in current and future neutrino telescopes from nearby Gamma-Ray Bursts

Monday, 11 July 2016 12:40 (20 minutes)

Abstract content
 (Max 300 words)
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Neutrino Astronomy has gained momentum after discovering cosmic neutrinos by the IceCube Neutrino Observatory at the south pole. A proposed upgrade of IceCube and planned future experiments will increase sensitivity to neutrino fluxes at ultrahigh energies ($> \text{PeV}$). We consider ultrahigh-energy neutrino flux from the Gamma Ray Bursts (GRBs) during the afterglow phase. We calculate this flux by modeling in details the observed afterglow data with standard afterglow theories for nearby long-duration GRBs within redshift 0.5. We also calculate neutrino events from these GRBs in the current and future experiments such as KM3NeT, IceCube Gen-2, Pierre Auger Observatory and JEM EUSO.

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Session Classification: Parallel Track A: Astrophysics and Space Physics, Plasma, Gravitation and Cosmology

Track Classification: Astrophysics and Space Physics