



Contribution ID: 641

Type: Oral contribution

Update on the determination of the extragalactic background light spectral energy distribution with H.E.S.S.

Wednesday, August 5, 2015 11:30 AM (15 minutes)

When very high-energy photons (VHE, $E > 100$ GeV) travel over cosmological distances, they interact with background light by pair production. In the Earth reference frame it turns out the threshold of the reaction with photons from IR to UV falls in the energy range where the H.E.S.S. array of Cherenkov telescopes is the most sensitive. Observations of spectral features in the VHE band of extragalactic sources related to this energy-dependent process allow measuring the spectral energy distribution (SED) of the extragalactic background light (EBL), otherwise very difficult to determine. We will present an update of the estimation of the SED of the EBL based on the measurements of the energy spectra of blazars with H.E.S.S. at redshifts up to $z=0.2$.

Collaboration

H.E.S.S.

Registration number following "ICRC2015-I"

554

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Session Classification: Parallel GA18 EGAL

Track Classification: GA-EX