Contribution ID: **131** Type: **Oral presentation**

MAGIC detection of very-high-energy gamma-ray emission from the z = 0.94 blazar PKS 1441+25

Monday, 26 October 2015 15:15 (15 minutes)

Very-high-energy (VHE, E > 100 GeV) gamma-ray emission from the very distant flat spectrum radio quasar PKS 1441+25 (z = 0.940) was detected in April 2015 with the MAGIC telescopes. Aside from the gravitationally lensed VHE blazar QSO B0218+357 (z = 0.944), also detected by MAGIC, PKS 1441+25 is the most distant VHE blazar detected to date. The VHE detection occurred in April 2015 during enhanced activity of the source at high energy (HE, 0.1 GeV < E < 100 GeV), as measured by the Large Area Telescope on board Fermi. The multi-wavelength light curve shows two distinct flux states occurring during this flare. The broadband spectral energy distribution can be explained by an external Compton model. For the first time, the VHE gamma-ray spectrum was used to indirectly probe the extragalactic background light at redshifts out to z ˜ 0.94.

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Session Classification: Gamma-Ray Astrophysics

Track Classification: Gamma-ray Astrophysics