

## **Very High Energy Gamma-ray detection by MAGIC from a direction coincident with the IceCube neutrino event**

On 22nd September, 2017 a high energy neutrino event was detected by the IceCube neutrino detector in spatial coincidence to the blazar TXS0506+056, which was also observed by the Fermi-LAT satellite to be in a state of enhanced gamma-ray activity. These observations triggered a series of multi-messenger and multi-wavelength (MWL) campaigns. On 24th September 2017, the MAGIC telescopes started follow-up observations of this source and soon after reported the detection of very high energy gamma-rays from its location. The association of a high energy neutrino with a blazar is quite rare and might suggest that the source is the birthplace of the most energetic particles streaming in the universe. Using the observational results from MAGIC and MWL data spanning the entire electromagnetic spectrum, here we discuss a possible interpretation of the underlying emission mechanisms inside the source which associates the highest energy gamma-rays to high-energy neutrinos and cosmic rays.

### **Authorship annotation**

for the MAGIC collaboration

### **Session and Location**

Wednesday Session, Poster Wall #181 (Ballroom)

### **Poster included in proceedings:**

yes

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**Track Classification:** Poster (participating in poster prize competition)