

# MAGIC searches for IceCube HESE track directions

*Wednesday, September 14, 2016 5:20 PM (15 minutes)*

The MAGIC telescopes can potentially detect very-high-energy gamma-rays emitted by multi-messenger sources.

One such interesting target that has been found recently, is astrophysical neutrino events.

Gamma-ray observations of neutrino directions have a potential to find hadronic gamma-ray emissions from the neutrino directions and to identify neutrino sources.

The IceCube Collaboration has reported detection of up to 55 astrophysical neutrino events, resulting from interactions with the material inside the IceCube detector's active volume – the so-called High Energy Starting Events (HESE).

These include 13 track-like events, usually generated by a muon neutrino via charged-current interaction.

The track-like events (as opposed to cascade-like ones, made via neutral-current interaction) are characterised by a good angular resolution ( $<1$  degree) which enables follow-up observations by IACTs.

In 2016 the MAGIC telescopes carried out follow-up observations of 4 selected HESE track-like events from the Northern hemisphere: HESE-37, HESE-38, HET (ATel #7856), and the latest GCN alert of 27th April (GCN #19363), whose deposited energies range from  $>30$  TeV up to 2600 TeV.

In this contribution we will present the results of the MAGIC observations and discuss their ensuing constraints on the density of astrophysical neutrino sources.

## Summary

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**Session Classification:** Poster Session (coffee at 15:00) & CERN Visit

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