

Follow-up of neutrino alerts with IACTs

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What is this contribution about? We report results from follow-up observations of IceCube neutrino alerts performed with FACT, H.E.S.S., MAGIC and VERITAS. Two types of alerts are considered: single high energy neutrino events with high probability of being of astrophysical origins and neutrino multiplets (flares). We present the observations taken after the IceCube-170922A/TXS 0506+056 coincidence.

Why is it relevant/interesting? Neutrinos and γ -rays should be produced together through hadronic interactions of cosmic rays inside their sources. Joint observations allow to identify potential neutrino and cosmic ray emitters and to study their emission mechanisms.

What have we done? The IACTs have observed 11 single event and 7 neutrino multiplet arrival directions, shortly after they were announced by IceCube

What is the result? No VHE γ -ray counterpart has been detected, or observed in emission state different than before the alerts. This allows us to set upper limits on the VHE γ -ray emission potentially associated with the neutrino emission from the observed directions.