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Rapid Response to Extraordinary Events: the Gamma-Ray Follow Up (GFU) platform for IceCube

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The discovery of an astrophysical flux of high-energy neutrinos with IceCube is a milestone in the field of multi-messenger astronomy. Traditional time-integrated searches for point-like neutrino sources have so far been unsuccessful because of large backgrounds and weak neutrino signals. IceCube's capability of observing the sky with full duty cycle enables us to search for transient neutrino emissions and alert the astrophysical community with low latency in case of detection, aiming for the identification of an electromagnetic counterpart of rapidly fading sources. In this talk, the Gamma-Ray Follow Up (GFU) platform will be presented, which allows generating and sending alerts to the astrophysical community in response to the real-time identification of muon neutrino candidates. These alerts are triggered by neutrino clusters coming from, both, catalogued gamma-ray emitters and anywhere in the sky, as well as by single high-energy neutrino events.

Collaboration name

IceCube

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