

# High Energy Neutrino Astronomy

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## *Abstract*

IceCube at the south pole had reported the discovery of TeV-PeV extraterrestrial neutrinos, which open a brand new window to observe the universe. I will briefly overview the history of the high energy neutrino detection, and then discuss the possible origins of these high energy neutrinos. I will emphasize that the multi-messenger approach may be the best way to diagnose the neutrino origin. By the photon-neutrino connection in the neutrino production processes, we can use the Fermi-LAT observations of various objects to constrain their neutrino flux, and test if they could be the sources of the IceCube detected neutrinos.