

Theoretical Interpretations of IceCube Results

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IceCube telescope has detected \sim TeV-PeV neutrinos of astrophysical origin. Currently, their origin is still unknown. In this talk, we will review the main recent theoretical explanations for these high-energy neutrinos. Both scenarios of a Galactic origin (such as the Fermi bubbles, cosmic rays in the halo, or other Galactic sources) and of an extragalactic origin (such as active galactic nuclei, starburst galaxies, or some types of supernovae) will be discussed. These results will also be presented in the context of multi-messenger astronomy: We will show how observations of gamma-rays and cosmic rays could help disentangle between the different scenarios.

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