

Vulcano Workshop 2022 - Frontier Objects in Astrophysics and Particle Physics



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Models of Neutrino sources

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The detection of a diffuse flux of high-energy neutrinos by the IceCube observatory has opened a new window to the Universe, revealing the existence of extremely energetic astrophysical neutrino sources. While the isotropic distribution of the IceCube astrophysical neutrinos favors an extragalactic origin, the sources responsible for the observed flux are still almost entirely unresolved and pose a compelling mystery.

High-energy neutrinos are produced by the interactions of energetic protons with surrounding photons and matter and are therefore a signature for hadronic cosmic accelerators.

I will present and discuss various models for particle acceleration and neutrino production in neutrino source candidates.

Primary author: LAMASTRA, Alessandra (INAF-OAR ASI - SSDC)

Presenter: LAMASTRA, Alessandra (INAF-OAR ASI - SSDC)

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