

Special Issue on
Study on the Origin of High-Energy Neutrinos

CALL FOR PAPERS

The recent discovery of diffuse extraterrestrial neutrinos in the TeV–PeV range by IceCube announces the advent of a new era for high-energy neutrino astronomy. Given their very small cross-sections, neutrinos can traverse dense astrophysical environments from which electromagnetic radiation may not escape and serve as a unique cosmic messenger of some extreme astrophysical objects. Besides, unlike charged particles such as cosmic rays, neutrinos are immune to the magnetic fields on their way from their birth place to the Earth and hence reveal the location of cosmic ray accelerators. Despite a lack of very high precision in event reconstruction and relatively low statistics at these early stages of high-energy neutrino astronomy, the state-of-the-art measurements already shed some light on the properties of the sources and relevant physical processes. In order to better understand neutrino sources and the underlying physical processes and guide the direction of future efforts, a comprehensive and deep-going investigation based on the current observations of neutrinos along with other cosmic messengers is needed.

This special issue is dedicated to fully explore the origin of high-energy neutrinos and the constraints on their origin from current observations. We also hope to attract original review articles as well as review articles which describe the up-to-date observational and/or theoretical research in the field of high-energy neutrino astronomy.

Potential topics include but are not limited to the following:

- ▶ Generic study of the requirement of the sources of high-energy neutrinos
- ▶ Theoretical model of specific sources of high-energy neutrinos
- ▶ Multimessenger study of candidate sources
- ▶ Study of cosmogenic neutrino at ultrahigh energies
- ▶ Acceleration of protons to PeV energy and beyond
- ▶ Cosmic ray propagation and hadronic interactions
- ▶ Study of relevant particle physics

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/aa/soh/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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