

Special Issue

Multi-Messenger Astrophysics: Synergies Between Cosmic Rays, Gravitational Waves, Neutrinos, and Electromagnetic Signals

Message from the Guest Editors

Major international projects contribute to multi-messenger observations of cosmic rays, neutrinos, gamma-rays and gravitational waves, this will lead to progress on open questions on the nature and type of sources of these messengers (e.g. super-massive black holes at the center of active galaxies, violent supernova explosions, or mergers of compact stars in binary systems), on the role of hadronic processes in astrophysical sources, of extra-galactic magnetic fields, and of acceleration and propagation mechanisms. This Special Issue aims to provide an overview of the existing and future developments in multi-messenger astrophysics, of theoretical models and the experimental results obtained by space-based and ground-based infrastructures, together with open questions and future prospects towards next generation multi-messenger observatories. The study of these and other related topics are the goal of this special issue, [...] For further reading, please follow the [link](#) to the Special Issue Website.

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Deadline for manuscript submissions

31 January 2026



Universe

an Open Access Journal
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Impact Factor 2.6
CiteScore 5.2



mdpi.com/si/229226

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About the Journal

Message from the Editor-in-Chief

The multidisciplinary journal *Universe* is aiming to follow and, hopefully, to lead to the largest extent as possible the ever-self renovating threads which weave mathematical theories with our understanding of the magnificent natural world. On behalf of all the distinguished members of the Advisory and Editorial Boards, I extend my welcome to this journal and look forward to hearing from the interested contributors and learning about their valuable research.

Editor-in-Chief

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