



Astrophysics, Cosmology with Gravitational Waves and Symmetry

Guest Editors:

Dr. Tanmoy Paul

Department of Physics, National
Institute of Technology,
Jamshedpur 831014, Jharkhand,
India

Prof. Dr. Soumitra SenGupta

School of Physical Sciences,
Indian Association for the
Cultivation of Science, Kolkata
700032, India

Dr. Debaprasad Maity

Department of Physics, Indian
Institute of Technology
Guwahati, Assam 781039, India

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Message from the Guest Editors

Dear Colleagues,

This specific issue is broadly inclined to both theoretical and observational sides of gravitational waves. We hope that through this issue, people can think and understand more deeply about gravitational waves. The specific themes include (but are not confined to):

- Primordial gravitational waves generated from quantum fluctuations in the very early universe;
- Induced gravitational waves generated from either enhanced scalar perturbations (over low scales) in the context of primordial black holes or primordial magnetic field (over all scales) in the context of magnetogenesis;
- Identifying the reheating era more through primary and secondary GWs;
- Narrowing the window of modified gravity theories through the observation of PGWs;
- Modification of standard cosmology to be consistent with NANOGrav data;
- Other aspects that can be connected with gravitational waves.

We also welcome reviews on the progress we have reached so far and what more we can achieve within the upcoming 5–10 years.





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Editor-in-Chief

Prof. Dr. Sergei Odintsov

ICREA, 08010 Barcelona and
Institute of Space Sciences (IEEC-
CSIC), C. Can Magrans s/n, 08193
Barcelona, Spain

Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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Contact Us

Symmetry Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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