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## Symmetry in Dark Matter and Black Holes

Guest Editor:

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### Message from the Guest Editor

Dear Colleagues,

Symmetry is a fundamental concept in physics and plays a crucial role in understanding various phenomena, especially gravity at large scales. On the cosmic scale, two prominent phenomena are dark matter and black holes. Dark matter, which constitutes a significant portion of the universe, and black holes, which represent intriguing strong gravitational effects, both exhibit inherent symmetries that are essential for a comprehensive understanding of these phenomena. The recent advancements in the field, particularly in the observations of gravitational waves and the imaging of black holes, have opened up new avenues for studying the role of symmetry in dark matter and black holes. To further advance our understanding, this Special Issue aims to explore the intricate interplay between symmetry and these fascinating cosmic entities. Through the contributions of leading experts in the field, with this Special Issue, we hope to shed light on the crucial role of symmetry in the understanding of dark matter and black holes...

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**Special** Issue



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## Editor-in-Chief

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## 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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