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# **Modified Theories of Gravity**

Guest Editor:

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## Message from the Guest Editor

Dear Colleagues,

Einstein's theory of general relativity has seen tremendous experimental success over the last century, most recently with the observation of gravitational waves. However, a handful of observations, such as dark matter, dark energy and black holes motivate the construction of theories that go beyond general relativity. Also, we still lack a complete theory of the early universe free of singularities, which also motivate modified theories of gravity that address these issues. Finally, modified theories of gravity arise naturally in the semiclassical limit of some quantum theories of gravity such as string theory and loop quantum gravity. Conversely, modified theories of gravity can motivate the correct starting point for quantizing gravity. This Special Issue will explore all of these dimensions of modified theories of gravity.











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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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