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## Modified Gravity: From Black Holes Entropy to Current Cosmology

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### Message from the Guest Editors

In this special issue, we discuss the application of thermodynamics to the test of a successful alternative gravitational theory to general relativity. Through this procedure, we can obtain a clue to resolve the dark energy problem “geometrically”. It is considered that any successful modified gravity theory should obey the second law of thermodynamics. If the second law is violated in certain universes in a model, it is more likely to be due to an incorrect generalization of the second law or some inherent inconsistency of the model itself. For the latter case, the model should be abandoned. It is strongly expected that the considerations of this special issue can produce our new physical understanding on entropy in the context of the relation between thermodynamics and gravitation and shed light on novel ingredients as well as insights on modern cosmology, in particular new properties of dark energy.



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# Special Issue



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## Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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