

Special Issue

Black Hole Thermodynamics

Message from the Guest Editors

According to black hole thermodynamics, geometrical quantities, such as horizon area and surface gravity, are related to thermodynamic quantities, such as entropy and temperature. In this regard, calculating conserved and thermodynamic quantities of the black holes, examining the validity of no-hair conjecture, and also the first law of thermodynamics are very important. It is worthwhile to mention that investigation of Hawking phase transition and thermal stability is an essential tool for considering a black hole as a real and viable thermodynamical system. In addition, recent progresses in the black hole thermodynamics and their relations to the AdS/CFT correspondence implied thermodynamical variability nature of the cosmological constant. It was found out that black holes, along all assigned thermodynamic variables, also have rich phase structures in complete analogy with non-gravitational thermodynamic system similar to van der Waals gas system. In this regard, the reentrant of the phase transition, existence of the triple point, and analogous heat engines are investigated in the literature.

Guest Editors

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About the Journal

Message from the Editor-in-Chief

The multidisciplinary *Universe* journal 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 editorial board, I extend my welcome to this new journal and look forward to hearing from the interested contributors and learning about their valuable research.

Editor-in-Chief

Prof. Dr. Lorenzo Iorio

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