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Modified Gravity and Dark Matter at the Scale of Galaxies

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Message from the Guest Editors

In the 1970s, V. C. Rubin and W. K. Ford confirmed the flatness of rotation curves, leading to the conclusion that galaxies are embedded in massive dark halos that extend to large radii. In the last fifty years, dark matter has been established as one of the main components of the Universe. It is the second most important component, driving the emergence of large-scale structures. Nevertheless, its fundamental nature is still completely unknown. The aim of this Special Issue is to focus on the kinematic and dynamic probes that stellar systems and galaxies offer in order to test the dark matter paradigm and the underlying theory of gravity. Contributions to this issue may be related to alternative paradigms (for instance, warm dark matter, self-interacting dark matter, fuzzy dark matter, and axions, among others), detection strategies, N-body simulations and data analysis methods, modified gravity models that modify the dynamics at the scale of galaxies, dynamical and kinematical probes of dark matter and modified gravity at the scale of stellar system and galaxies, recent discoveries confirming or questioning the standard paradigm, and reviews on the state-of-the-art of the field.



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Special Issue



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Editor-in-Chief

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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.

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