Special Issue

Relevant Tensions in the Standard Cosmological Model and Small Scale Problem of Cold Dark Matter Paradigm

Message from the Guest Editors

In the last two decades, statistical analyses of astrophysical and cosmological datasets have favored the concordance ΛCDM cosmological model. In this model, the most important energy density component is dark energy (DE), needed to explain the undergoing period of accelerated expansion. The second in importance is dark matter (DM), needed to explain the emergence of large-scale structures. Nevertheless, the model lacks observational evidence of DM and DE at the particle level. The standard cold dark matter (CDM) paradigm shows several difficulties at galactic scales. On one side, this “small-scale crisis” may open up new avenues to explore to solve these issues. On this side, the role of N-body simulation is strategic to understand the impact of baryonic feedback, and whether they can represent a solution to the small-scale issues within the CDM. The aim of this Special Issue is to discuss the concordance ΛCDM cosmological model through the problems it encounters at both cosmological and galactic scales, and the possible solutions to unveil the nature of DM and DE, and whether general relativity holds on all scales.

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Message from the Editor-in-Chief

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

Editor-in-Chief

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