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Geometric and Topological Models of Dark Matter and Dark Energy

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Deadline for manuscript submissions:
closed (10 September 2022)

Message from the Guest Editors

Today, dark energy and dark matter are part of the standard model in cosmology. The nature of dark matter and dark energy is currently a hot topic. However, what is known experimentally? Dark matter was never detected in any experiments, but its impact can be observed by gravitational lensing. Current experiments favour the concept of a cosmological constant for dark energy.

Most models of dark matter are related to particle physics, such as axions, sterile neutrinos, etc. Similar ideas such as timely varying scalar fields, known as quintessence, should represent dark energy. However, experimentally, no dark matter particle has been detected and no sign for quintessence has been found. Therefore, why not consider new ideas?

We wish to invite both original and review papers to this Special Issue that particularly emphasize ideas and problems of frameworks based on geometry and/or topology. We believe that such frameworks have a potential to explain dark matter and dark energy at least partially. We are interested in collecting contributions on a broad range of approaches and ideas that emphasize the topological nature of dark matter and dark energy.

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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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