

## Special Issue

# Testing General Relativity from the Solar System, Black Holes to Cosmology

### Message from the Guest Editor

Einstein's general theory of relativity has passed most of the tests in and beyond the solar system with flying colors. However, there are many important reasons to question the validity of general relativity and to determine where it will be violated. The theory is especially challenged by some unexplained phenomena in astronomical observations, such as the flat rotation curves of spiral galaxies and the accelerating expansion of the universe, which may point towards new physical laws from the scale of the solar system to the one of cosmology. The aim of this Special Issue is to bring together researchers working on discussing and testing general relativity. Topics can include the possible violation of the Einstein equivalence principle, testing with the modified theory of gravity in the context of parametrized post-Newtonian formalism, probing the spacetime of black holes through particle dynamics, and testing general relativity in weak gravitational fields, strong gravitational fields and even at the cosmological scale. We welcome both reviews and original manuscripts, and look forward to your contributions.

### Guest Editor

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### Deadline for manuscript submissions

closed (31 August 2023)



## Universe

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## About the Journal

### 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.

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### Editor-in-Chief

Prof. Dr. Lorenzo Iorio  
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