



Wormholes in Space-Time: Theory and Facts

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Message from the Guest Editors

Dear Colleagues,

The interest in the physics of wormholes has increased considerably in the last few years, boosted mainly by both the need for observationally discriminating them from other compact objects and the possibility of avoiding the violation of the energy conditions by considering modified gravitational dynamics. A variety of methods have been proposed for their empirical characterization, ranging from the analysis of gravitational waveforms or the lensing of background sources to the properties of accretion disks around them and the observation of their shadow. As a result, and analogously with black holes, which for some time were regarded as exotic solutions of the gravitational field equations, wormholes can presently be considered as a plausible physical reality. They defy our understanding of key physical principles, such as causality or the no-cloning of quantum information, and the deep implications that their existence entails are as appealing as the reasons argued for their non-existence. In fact, there is no theorem ruling out wormhole geometries.

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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.

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