

Special Issue on  
**Relativistic Aspects of Stellar Structures and Modified Theories of Gravity 2024**

# CALL FOR PAPERS

In the last two decades, modified theories of gravity have attracted much attention. These modified/alternative theories of gravity have played an important role in investigating some hidden facts of the universe. After being motivated by the original theory and using some complex lagrangians, modified theories like  $f(R)$ ,  $f(R,T)$ ,  $f(G)$ ,  $f(R,G)$ ,  $f(G,T)$  have been structured, where  $R$  denotes the Ricci scalar,  $G$  is the Gauss-Bonnet term and  $T$  is the trace of stress energy tensor.

In astrophysics, stellar structures are generally referred to as white dwarfs, neutron stars including hybrid and quark stars, wormholes, and black holes. White dwarfs and neutron stars originated due to the degeneracy pressure produced by the fundamental particles responsible for their formation. The study of stellar structures in the context of modified theories of gravity is an interesting topic of discussion. The possibility of relatively high radii and masses of neutron stars is an interesting question in the framework of modified gravity. In recent years, the investigation of the existence of wormholes has also been an interesting and attractive topic for researchers. Wormholes are assumptive tube-like geometrical structures connecting two widely separated asymptotically flat universes, or two different asymptotically flat portions of the same universe and have no horizon. The possible existence of exotic or non-exotic matter wormhole solutions in modified theories of gravity is a very interesting debate.

In addition to the above-mentioned interesting topics, the bouncing cosmologies are alternative models of the Big Bang scenario. For this Special Issue, discussion of bouncing cosmology in modified theories may also be an attractive choice. Moreover, discussion of black hole solutions and cosmic inflation in the background of different modified theories may also be interesting among the researchers. The aim of this Special Issue is to collate original research and review articles in the field.

Potential topics include but are not limited to the following:

- ▶ Compact stars in modified gravity
- ▶ Wormhole discussion in modified gravity
- ▶ Cosmological solutions, in particular, the bouncing cosmology in modified gravity
- ▶ Black hole solutions in modified gravity
- ▶ Cosmic Inflation

Authors can submit their manuscripts through the Manuscript Tracking System at <https://review.wiley.com/submit?specialIssue=840803>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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