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Compact stars as a test for modified gravity theories

We investigate the equilibrium configurations of neutron stars, quark stars and white dwarfs in a modified gravity theory, namely, $f(R, T)$ gravity, for which R and T stand for the Ricci scalar and trace of the energy-momentum tensor, respectively. Considering the functional form $f(R, T) = R + 2\lambda T$, with λ being a constant, we obtain the hydrostatic equilibrium equation for the theory. Some physical properties of compact stars, such as: mass, radius, pressure and energy density, as well as their dependence on the parameter λ are derived.

Summary

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