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# Twin Stars in General Relativity and Extended Theories of Gravity

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# Abstract

We explore gravity-independent equations of state for neutron stars, particularly focusing on twin stars. Examining four categories, we emphasize their behavior in both General Relativity and Palatini gravity. Additionally, we discuss a subcategory of type I, which, in the context of General Relativity, does not exhibit twin star phenomena, yet demonstrates this phenomenon in modified gravity. Furthermore, we briefly address challenges associated with the negative trace of the energy-momentum tensor, prevalent in both theories.

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