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The power of binary pulsars in testing Gauss-Bonnet gravity

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Binary pulsars are a powerful tool for probing strong gravity that still outperforms direct gravitational wave observations in a number of ways due to the remarkable accuracy of the pulsar timing. They can constrain the presence of additional charges of the orbiting neutron stars very precisely, leading to new channels of energy and angular momentum loss, such as scalar dipole radiation. In the present talk, I will review the existing constraints on theories beyond GR, focusing especially on the Gauss-Bonnet theories of gravity.

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