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Metric-Affine Theories of Gravity: From theory to new possible effects

Thursday, 10 July 2025 10:00 (30 minutes)

General Relativity is based on Riemannian geometry, where gravity is solely represented by the metric degrees of freedom. This framework can be generalized by introducing torsion and nonmetricity into the underlying geometry. In this talk, I will describe how to construct such theories and how these geometrical quantities might lead to new effects on astrophysical and cosmological scales. I will show that the gauge approach to gravity can be formulated without known ghost instabilities by including cubic interactions, and I will present novel effects that this theory might exhibit.

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