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Quadratic metric-affine gravity and stability of the vector sector

Thursday 26 October 2023 09:00 (1 hour)

In this talk, we will start by reviewing the geometrical entities that constitute the basis of metric-affine gravity: the metric and the connection, as well as the decomposition of the latter. Then the quadratic theory will be presented and we will show how strong the stability conditions for the four vector irreducible pieces of the torsion and the nonmetricity tensors are. These will reduce the number of parameters in the curvature-square sector from 16 to 5. We will also present the case of Weyl-Cartan gravity, proving that the stability of the vector sector completely fixes the dynamics of the full Lagrangian to just an Einstein-Proca theory or pure General Relativity.

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