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Hamilton's equations for the teleparallel equivalent of general relativity

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We compute Hamilton's equations for the teleparallel equivalent of general relativity (TEGR), which is a reformulation of general relativity based on a curvatureless, metric compatible, and torsionful connection. For this, we consider the Hamiltonian for TEGR expressed in the vector, antisymmetric, symmetric and trace-free, and trace decomposition of the phase space variables. We compare our results with Hamilton's equations of general relativity, and stress its importance for the formulation of the Cauchy problem in modifications based on this theory, as f(T) gravity, and its applicability in numerical relativity.

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