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On Lorentz-invariant massive spin-2 theories

Tuesday, 22 January 2019 09:00 (45 minutes)

In this talk, we construct Lorentz-invariant massive spin-2
theories in a flat space-time. Starting from the most general action of a massive spin-2 field whose Lagrangian contains up to quadratic in first derivatives of a field, we investigate new possibilities by using the Hamiltonian analysis. By imposing degeneracy of the kinetic matrix and the existence of subsequent constraints, we classify theories based on the number of degrees of freedom and constraint structures and obtain a wider class of Fierz-Pauli theory as well as (partially) massless theories, whose vector and/or scalar degrees of freedom are absent. We also discuss the relation between our theories and known massive/massless spin-2 theories.

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