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How to find the Feynman Rules from any scalar-tensor theory and not collapse in the process

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The ability to represent perturbative expansions of interacting quantum field theories in terms of simple diagrammatic rules has revolutionized calculations in particle physics. However, in the case of extended theories of gravity, deriving this set of rules requires linearization of gravity, perturbation of the scalar fields, and multiple field redefinitions, making this process very time-consuming and model dependent. In this talk, I will motivate and present FeynMG, a Mathematica extension of FeynRules that automatizes this calculation, allowing for the application of quantum field theory techniques to scalar-tensor theories.

Author: SEVILLANO, Sergio

Co-authors: COPELAND, Ed (Nottingham University); SPANNOWSKY, Michael (IPPP Durham); Dr MILLINGTON, Peter (University of Manchester)

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