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Spin-2 field contributions to the muon anomalous magnetic moment.

The muon anomalous magnetic moment, $a_\mu = (g_\mu - 2)/2$, is a valuable observable for constraining new physics due to its precise measurement. Its study in the so-called “Higher-derivative” theories of gravity, which introduce massive gravitons, has proven helpful in understanding their behaviour as well as their relation to General Relativity. In this talk, we discuss the one-loop contributions to a_μ for gravitons in General Relativity and Stelle’s modified theory of gravity, which happen to be heavily suppressed by the Planck mass. We arrive at the non-decoupling of Stelle’s theory in the limit of super massive gravitons. We extend, then, these results to a generic massive spin-2 particle, imposing restrictions on the coupling constant of the theory so as to achieve observable contributions.

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