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Franco Albareti: Gravitational effects on the Higgs field

Friday 30 October 2015 15:00 (30 minutes)

In this talk, I will present the scalar 1-loop corrections to the Higgs effective potential in a slowly-varying weak gravitational field. These corrections are finite and do not require further renormalization, i.e. the UV behaviour is the same as in flat spacetime. The computed effective potential with gravitational contributions implies an inhomogeneous Higgs vacuum expectation value and this translates into direct observational probes in the Solar System, e.g. variations on the proton-to-electron mass ratio.