

NEW PERSPECTIVES IN CONFORMAL FIELD THEORY AND GRAVITY

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Radiative neutrino masses and the Cohen–Kaplan–Nelson bound

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Cohen, Kaplan and Nelson (CKN) have argued that quantum field theories coupled to gravity feature not only a UV cutoff but also an IR cutoff, and that these cutoffs are related via the physics of black holes. By imposing that quantum field theory cannot describe black holes, they derived the relationship $\Lambda_{IR} \geq \Lambda_{UV}^2/M_P$ and therefore provide the allowed energy range for a QFT from Λ_{IR} to Λ_{UV} . This has interesting phenomenological consequences as the cutoffs affect the calculation of loop integrals and therefore have impact on radiative corrections.

In this talk we investigate the possible impact of the CKN bound on four different radiative neutrino mass models and show that this effect has significant consequences for the parameter space.

Summary

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