

Leading higher-derivative corrections to the Kerr geometry

Friday, 17 January 2020 12:45 (15 minutes)

I will talk about a recent paper JHEP 1905 (2019) 189, where we compute the most general leading-order correction to the Kerr solution when the Einstein-Hilbert action is supplemented with higher-derivative terms, including the possibility of dynamical couplings controlled by scalars. The model we present depends on five parameters and it contains, as particular cases, Einstein-dilaton-Gauss-Bonnet gravity, dynamical Chern-Simons gravity and the effective action coming from Heterotic Superstring theory. We study several properties of the corrected black holes, such as geometry of the horizon, ergosphere, light rings and scalar hair.

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Session Classification: short talk