

The ultraviolet behavior of quantum gravity with fakeons

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In this talk I will expose the features of a new local higher-derivative theory of quantum gravity. The model is based on the concept of “fakeons” or “fake degrees of freedom”, which solves the problem of ghosts and leads to a unitary, renormalizable theory. In particular, I will discuss its ultraviolet behavior at one-loop (including finite terms) in the case of vanishing cosmological constant, pointing out the physical difference of this theory with respect to Einstein gravity. Finally, the case of nonvanishing cosmological constant will be addressed.