

Exorcizing the ghosts in higher-derivative gravity

Sunday 10 September 2023 16:00 (30 minutes)

Higher-derivative theories of gravity are advocated to be power-counting renormalizable. As such, they might play a role in the possible UV completion of gravity. At the same time, some of these theories suffer from the presence of ghosts – unphysical degrees of freedom that at the classical level lead to instability, while upon quantization, they cause violation of unitarity. In this talk, I will present boundary conditions that remove such pathological modes, studying them on the examples of Conformal and Einstein-Weyl gravity, and discuss the consequences for these theories once the boundary conditions are implemented.

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