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Partition function in conformal gravity

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Summary

We derive the form of the partition function in conformal gravity using an extended form of the Faddeev-Popov method. The method uses conformal gauge fixing and special (third) conformal ghosts. In this way, at one-loop, the theory is proven to be conformally invariant also on the quantum level without performing an additional final conformal transformation. The partition function is discussed on a general background as well as on Ricci-flat and maximally symmetric.

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