

On Metric Dependence of Vilkovisky-DeWitt Effective Potential

KAO, W. F. ; Lin, Shi-Yuun

Abstract

It is known that the Vilkovisky–DeWitt effective potential for Einstein gravity depends on the choice of the metric of configuration space. We will show that this metric dependence occurs not only in gauge field theories, but also in scalar fields as well as other field theories with "unnatural" initial choices of metric. This means that the problem of metric dependence relates to initial field parametrization but not gauge symmetry.