

Effective actions for Einstein-Maxwell theory in the worldline formalism

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Abstract content

We summarize our recent work on the application of the worldline formalism to the calculation of the effective actions in Einstein-Maxwell theory due to scalar and spinor loops. In the low energy limit and at linear order in the curvature we obtain relatively compact two-parameter integral representations for these effective actions. A particularly simple Euler-Heisenberg type representation is found for the case of a self-dual Maxwell field. The effective actions are obtained explicitly to quartic order in the Maxwell field.

Summary

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