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Heat kernel asymptotics and some applications to mathematical physics. (English)

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This Habilitationsschrift gives an overview of the author's scientific work concerning heat kernel asymptotics connections with torsion and the spectral action principle and other related topics.

See the author's extensive references in the Habilitationsschrift.

MSC:

- [58-02](#) Research exposition (monographs, survey articles) pertaining to global analysis
- [58J35](#) Heat and other parabolic equation methods for PDEs on manifolds
- [58J90](#) Applications of PDEs on manifolds
- [58J37](#) Perturbations of PDEs on manifolds; asymptotics
- [81Q10](#) Selfadjoint operator theory in quantum theory, including spectral analysis

Keywords:

[Lagrangian](#); [Dirac operator](#); [heat kernel](#); [asymptotics](#); [quantum gravity](#)