

General Relativity and Quantum Cosmology

Deformation of contour and Hawking temperature

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It was found that, in an isotropic coordinate system, the tunneling approach brings a factor of 1/2 for the Hawking temperature of a Schwarzschild black hole. In this paper, we address this kind of problem by studying the relation between the Hawking temperature and the deformation of integral contour for the scalar and Dirac particles tunneling. We find that correct Hawking temperature can be obtained exactly as long as the integral contour deformed corresponding to the radial coordinate transform if the transformation is a non-regular or zero function at the event horizon.

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