

Throat quantization of the Schwarzschild-Tangherlini(-AdS) black hole

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ABSTRACT

Adopting the throat quantization pioneered by Louko and Mäkelä [1], we derive the mass and area spectra for the arbitrary-dimensional Schwarzschild-Tangherlini black hole and its AdS and topological generalizations in the stationary state [2]. While area/entropy is equally spaced for asymptotically flat black holes, mass is equally spaced in the asymptotically AdS case. We also investigate physical properties of the toroidal AdS black hole in the non-stationary state described by exact wave functions [3].

References

- [1] J. Louko and J. Mäkelä, Phys. Rev. D **54**, 4982 (1996).
- [2] G. Kunstatter and H. Maeda, Class. Quant. Grav. **31**, 115009 (2014).
- [3] H. Maeda and G. Kunstatter, in preparation.