

Thermodynamics of various black holes

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After the motivation for the extended gravity, such as higher curvatures beyond Einstein, various thermodynamic black holes will be studied. Black holes, with their fundamental structure, play a crucial role in guiding us towards the quantum domain. Their thermodynamic properties across different theories, particularly through holography, will be examined with the negative cosmological constant considered mostly. The theory with the Gauss-Bonnet term will also be mentioned. A notable feature of dilaton-Einstein-Gauss-Bonnet gravity in 4 dimensions, unlike Einstein's gravity, is the presence of a minimum mass threshold below which a black hole cannot form. Phase diagrams for various black holes will be treated.

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