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Thermodynamic Parameters of a Boulware-Deser Black Hole from Fluid-Gravity Correspondence

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As a solution to the equations of Lanczos-Lovelock Gravity (a natural extension of General Relativity for higher dimensions), the Boulware-Deser black hole presents as an interesting system. Indeed, given the universal success had to this point by prospective theories of quantum gravity in modelling the Schwartzchild black hole, the next challenge for such theories may be found in correctly modelling the Boulware-Deser black hole. To this end, the thermodynamic parameters of the Boulware-Deser black hole have been found and are shown here to be nearly identical to the corresponding parameters of a Schwartzchild black hole, each with an additive correction term. The culminating purpose of this work is to continue within a fluid-gravity model in order to calculate the bulk viscosity of the horizon fluid of the Boulware-Deser black hole.

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