

# Quasi-homogeneous black hole thermodynamics

Hernando Quevedo

*National Autonomous University Of Mexico, Mexico City, Mexico*

We present several arguments which indicate that the fundamental equations of black hole thermodynamics should belong to the class of quasi-homogeneous functions of degree different from one. Arguments include the non-extensivity properties of black holes as well as compatibility conditions in geometrothermodynamics. We show that the quasi-homogeneity of black holes in alternative gravity theories such as Born-Infeld, Gauss-Bonnet, etc., implies that coupling constants should be considered as thermodynamic variables, leading to natural extensions of thermodynamics.