

Abstract:

The near horizon geometry of extremal black holes provides a window into the full understanding of quantum gravity. The extent that this may be true, notably for non-globally hyperbolic spacetimes, can be investigated by a careful analysis of where the quantum degrees of freedom live for asymptotically AdS spacetimes. In this talk, I will discuss current efforts in this direction via subleading corrections to AdS black hole entropy. I will focus on a class of four and five dimensional electrically charged and rotating asymptotically supersymmetric AdS black holes and will outline the two main methods of extracting the logarithmic corrections, via the heat kernel on the gravity side and the Kerr/CFT correspondence. I will also mention the implications of the results, including the contrast between asymptotically flat black holes and what this may suggest for the low-energy gravity theory.