



Department of
Theoretical Physics

THE QUANTUM SPACETIME SEMINAR SERIES

Generalized Hot Attractors

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Non-extremal black holes such as the astrophysical black holes we encounter in the sky remain mysterious objects. As solutions to general relativity, they possess certain invariants. We extend prior investigations of so-called hot attractor black holes to higher dimensions and add a scalar potential. In addition to the event and Cauchy horizons, when we complexify the radial coordinate, non-extremal black holes generically have additional horizons. We prove that products of all of the horizon areas are independent of variations of the asymptotic moduli further generalizing the attractor mechanism for extremal black holes. In gauged supergravity, we find that the product of horizon areas is not necessarily the geometric mean of the extremal area. We outline the derivation of horizon invariants for stationary backgrounds such as Kerr–Newman.