Contribution ID: **36**   Type: **Poster**

Localization of the 5D supergravity action and Euclidean saddles for the black hole index

We investigate equivariant localization of the gravitational on-shell action in odd dimensions, focusing on five-dimensional ungauged supergravity. We analyze the conditions for cancellation of boundary terms, so that the full action integral is given in terms of the odd-dimensional analog of the nuts and bolts of Gibbons-Hawking. We construct asymptotically flat Euclidean supersymmetric non-extremal solutions with an additional U(1) symmetry preserving the supercharge, two independent rotations and an arbitrary number of electric charges, providing black hole saddles of the gravitational path integral that computes a supersymmetric index, and evaluate their action equivariantly. We find that these Euclidean saddles smoothly interpolate between the supersymmetric extremal black holes and two-center horizonless microstate geometries. The interpolating parameter is the formal temperature, which does not appear in the action; hence the two limiting solutions give the same contribution to the index.

Primary author: TURETTA, Enrico (Istituto Nazionale di Fisica Nucleare)

Session Classification: Poster Session - Reception