REGULAR BLACK HOLES FROM PURE GRAVITY

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Abstract

I will review a recent program showing that regular (non-singular) black holes arise as generic, exact solutions of gravitational actions with infinite towers of higher-curvature corrections. After introducing the relevant quasi-topological gravities and their key structural properties, I will explain how resummation of these corrections yields black hole geometries that are everywhere regular. I will then outline how this framework addresses dynamical questions, including formation from spherical collapse of matter.