

"Maximal Analytic Extensions of the Emparan-Reall Black Ring"

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(joint work with Piotr T. Chrusciel)

We study global properties of a family of five-dimensional space-times found by Emparan & Reall in 2001, containing a black hole region, and solutions of the vacuum Einstein equations. After a review of some basic material of General Relativity, we will describe how to construct an analytic extension of these space-times. Contrary to classical 4-dimensional ones, the event horizon has non-spherical compact cross-sections. The space-times considered here have a global structure similar to the extended Schwarzschild space-time.

In particular, they are maximal, globally hyperbolic, and unique within a natural class of extensions."