WWU MÜNSTER

FACHBEREICH PHYSIK

Allgemeines Physikalisches Kolloquium

Donnerstag, 05.05.2022 um 16 Uhr c.t.

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Black Holes

Black Holes feature among the most fascinating predictions of Einstein's theory of general relativity. In the past decades fundamental progress has been made both at the experimental level (e.g. detection of gravitational waves from black hole mergers, the event horizon telescope) and at the level of their mathematical understanding, which is the topic of my talk. I will begin by discussing the geometry of the most important black hole solutions and review some classical results from the "golden age" of black hole physics (1963-1973). I will then outline how these classical results (and heuristic principles) can be combined with modern techniques from the theory of partial differential equations to produce a deepened understanding of the stability properties and the singularity structure of black holes.