

Einladung zum Würzburger Mathematischen Kolloquium

Julius-Maximilians-Universität Würzburg • Fakultät für Mathematik und Informatik

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Spacetimes near the boundary of existence

Dienstag, der 16. November 2021 • 14:15 Uhr

Der Vortrag findet als Zoom-Videokonferenzen statt.

Bitte fordern Sie den Zoom-Link an bei klingenberg@mathematik.uni-wuerzburg.de

Inhaltsangabe:

The general theory of relativity describes the effect of gravitation in terms of the curvature of Lorentzian manifolds via the Einstein equations, a system of nonlinear partial differential equations. One of the biggest surprises is that the theory predicts its own breakdown through the occurrence of singularities (black holes, big bang, etc.). Mathematically, singularities are described by geodesic incompleteness and the singularity theorems of Penrose and Hawking already confirmed their inevitable existence in the 1960s. In recent years the existence of black holes has also been observed through the analysis of movements of nearby stars, gravitational waves, and the event horizon telescope. In this talk we review some of the mathematical ideas and results obtained in connection with the existence and dynamical formation of black holes. Then we discuss the challenges to deal with realistic matter models leading to weak solutions and describe recent progress in handling the corresponding nonsmooth geometries that arise from them.



<https://www.mathematik.uni-wuerzburg.de/de/aktuelles/kolloquium/>

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Die Dozentinnen und Dozenten der Mathematik

