



Einladung zum Mathematischen Kolloquium mit Vor-Kolloquium

16:00-16:45 Uhr Vor-Kolloquium im N14 für Studierende und Promovierende, moderiert von **Saradha Senthil Velu**,

Vortragender Dr. Jan Sbierski

[The breakdown of classical determinism in the interior of black holes](#)

The aim of this pre-colloquium is to explain in some detail the mechanism that can lead to the breakdown of classical determinism in the interior of black holes. This mechanism will be demonstrated by the example of the spherically symmetric scalar wave equation. We will recall the notions of Lorentzian causality, introduce the concept of a Penrose diagram, present an example of a black hole spacetime, and work through the initial value problem for the spherically symmetric scalar wave equation.

Es spricht am

Freitag, den 13.12.2024, um 17:15 Uhr

Dr. Jan Sbierski

(University of Edinburgh)

über das Thema

[Strong cosmic censorship: how singularities restore determinism](#)

It has been known for a long time that classical determinism can break down in the interior of rotating black holes. In 1968 Roger Penrose found a heuristic mechanism that leads to an instability and the subsequent formation of a singularity in the interior of such black holes. It is the formation of such a singularity that is expected to generically restore determinism. This scenario is known as the strong cosmic censorship conjecture. In this talk I will review this conjecture and also recent progress towards its resolution.

Der Vortrag findet im Hörsaal N14 (M1) des Mathematischen Instituts (Gebäude C, Auf der Morgenstelle 10) statt. Zuvor wird zum Tee im Hermann-Hankel-Raum (6. Stock, ab 16:45 Uhr) eingeladen.