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FAKULTÄT FÜR MATHEMATIK
Dekan Univ.-Prof. Dr. Radu Ioan Boț

Einladung zur öffentlichen Defensio

Argam OHANYAN

Thema der Dissertation

Singularities and rigidity in smooth and non-smooth spacetimes

Abstract:

This thesis deals with questions of geometric rigidity and the existence of singularities in spacetimes. First, we extend the Hawking–Penrose singularity theorem to spacetime metrics of regularity C^1 . In the cosmological case, Bartnik’s famous splitting conjecture asserts the rigidity of the Hawking–Penrose theorem, and has been shown to be equivalent to the existence of CMC Cauchy surfaces. We extend a construction of Bartnik to obtain a large class of cosmological spacetimes which, although timelike geodesically incomplete, contain no CMC Cauchy surfaces. Lastly, we present a generalization of the Lorentzian splitting theorem to the synthetic context of Lorentzian length spaces.

Prüfungssenat

Univ.-Prof. Bernhard Lamel, PhD
(Vorsitz, Universität Wien)

ao. Univ.-Prof. Mag. Dr. Roland Steinbauer
(Universität Wien)

Prof. Dr. Gregory Galloway
(University of Miami)

Prof. Dr. Miguel Sánchez Caja
(Universidad de Granada)

Zeit und Ort

Dienstag, 29. Oktober 2024, 18:00 Uhr

Online:

<https://univiennea.zoom.us/j/64826163530?pwd=BGCHQRx1aLHrRJoTPvXHW5ORcbCqGc.1>

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