



Sommersemester 2016

Oberseminar
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den 30.06.2016 spricht um 14 Uhr c. t. im Raum N14

Prof. Dr. Spyros Alexakis
(University of Toronto)

über das Thema

Singularity formation in Black hole interiors

The prediction that solutions of the Einstein equations in the interior of black holes must always terminate at a singularity was originally conceived by Penrose in 1969, under the name of “strong cosmic censorship hypothesis”. The nature of this break-down (i.e. the asymptotic properties of the space-time metric as one approaches the terminal singularity) is not predicted, and remains a very hotly debated question to this day. One key question is the causal nature of the singularity (space-like, vs null for example). Another is the rate of blow-up of natural physical/geometric quantities at the singularity. Mutually contradicting predictions abound in this topic. Much work has been done under the assumption of spherical symmetry (for various matter models). We present recent developments (partly due to the speaker and G. Fournodavlos) which go well beyond this restrictive class. A key role is played by the axial symmetry reduction of the Einstein equations, where a wave map structure appears.

Hierzu wird herzlich eingeladen.

C. Cederbaum, G. Huisken