



## Oberseminar

### Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den **02.05.2024** spricht um **14 Uhr s.t.** im Raum **S9 (C6H05)** und über Zoom

**Dr. Eric Ling**

(University of Copenhagen)

über das Thema

#### Rigidity aspects of Penrose's singularity theorem

In this talk, we present some rigidity aspects of Penrose's singularity theorem. Specifically, we aim to answer the following question: if a spacetime satisfies the hypotheses of Penrose's singularity theorem except with weakly trapped surfaces instead of trapped surfaces, then what can be said about the global spacetime structure if the spacetime is null geodesically complete? In this setting, we show that we obtain a foliation of MOTS which generate totally geodesic null hypersurfaces. Depending on our starting assumptions, we obtain either local or global rigidity results. We apply our arguments to cosmological spacetimes (i.e., spacetimes with compact Cauchy surfaces) and scenarios involving topological censorship. This is joint work with Greg Galloway.

Den Zoom-Link erhalten Sie per E-Mail von Frau Martina Neu.

For participating online, please sign up by sending an email to Martina Neu.

Hierzu wird herzlich eingeladen.

Carla Cederbaum, Gerhard Huisken, zusammen mit Jan Metzger (Potsdam)