EBERHARD KARLS UNIVERSITÄT TÜBINGEN

Mathematisch-Naturwissenschaftliche Fakultät

**Fachbereich Mathematik
AB Geometrische Analysis,
Differentialgeometrie und
Relativitätstheorie**

Oberseminar
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den **16.11.2023** spricht um **14 Uhr s.t.** im Hörsaal **N15 (C-Bau) und über Zoom**

Jonathan Glöckle
(Universität Regensburg)

über das Thema

On the initial value problem for the Einstein inequalities

The Einstein field equations relate the curvature of a Lorentzian spacetime with the energy-momentum tensor determined by the matter distribution. Since the latter is hard to describe for a universe as ours, cosmological arguments usually just use that the energy-momentum tensor satisfies the dominant energy condition (=dec). The Einstein field equations then turn into a curvature condition for which A. Rendall coined the term "Einstein inequalities". In this talk, we want to discuss the Cauchy problem for these partial differential inequalities. Initial data sets for this problem necessarily satisfy a condition that is also called dec. We review for which initial data sets a solution is known to exist and rigidity phenomena that lead to local uniqueness. The main result, however, is a negative one: We construct dec initial data sets that cannot be embedded into dec spacetimes.

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)