



Sommersemester 2021

Oberseminar  
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den **24.06.2021** spricht um **14:00** per Videoübertragung

**Penelope Gehring**  
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über das Thema

**Electrically charged extensions with prescribed asymptotics**

Recent years have seen an increasing interest in understanding the stability of important geometric inequalities such as the Riemannian Penrose Inequality (RPI), proven independently by Bray, and Huisken and Ilmanen. Mantoulidis and Schoen constructed 3-dimensional asymptotically flat Riemannian manifolds, whose mass can be made arbitrarily close to the optimal value in the RPI, while the geometry of a neighborhood of the horizon is far from being rotationally symmetric. This can be interpreted as a suggestion of the instability of the RPI. Their construction was later generalized to higher dimensions by Cabrera Pacheco and Miao. Recently, the Mantoulidis–Schoen construction was transferred to the 3-dimensional case for asymptotically hyperbolic manifolds and for asymptotically flat, electrically charged manifolds by Cabrera Pacheco, Cederbaum, and McCormick and Alaei, Cabrera Pacheco, and Cederbaum, respectively. In this talk, we will discuss how to unify all of these constructions and generalize them to higher dimensions. This is joint work with Cabrera Pacheco, Cederbaum and Peñuela Diaz.

**Hierzu wird herzlich eingeladen. Bei Interesse bitte per E-Mail an [angelika.spoerer-schmidle@uni-tuebingen.de](mailto:angelika.spoerer-schmidle@uni-tuebingen.de) wenden, um den Link zur Videoübertragung zu erhalten.**

Hierzu wird herzlich eingeladen.

C. Cederbaum, G. Huisken, K. Kröncke