EBERHARD KARLS
UNIVERSITÄT TÜBINGEN

Mathematisch-Naturwissenschaftliche Fakultät

Fachbereich Mathematik
AB Geometrische Analysis,
Differentialgeometrie und
Relativitätstheorie

Oberseminar
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den **02.11.2023** spricht um **14 Uhr s.t.** im Hörsaal **N14 (C-Bau) und über Zoom**

Dr. Rodrigo Avalos
(Universität Tübingen)

über das Thema

Sobolev regularity of compactified 3-manifolds

In this talk we shall discuss the relation between an asymptotically Euclidean manifold (M^3, g) and its 1-point conformal compactification $(\hat{M}^3, \hat{g})$, and highlight how this procedure usually implies a drastic loss of regularity around the point of compactification. Understanding the precise degree of regularity of the compactified manifolds is a subject that finds several applications within geometric analysis and mathematical general relativity, and intersects subtle questions associated with regularity of solutions to geometric elliptic PDEs. The main goal of this talk will be to describe the relation between these problems, and present new results related to ongoing research in this direction. We will outline how to analyse the precise Sobolev regularity of the compactified manifold, highlighting the main difficulties in the process, which involve, among other things, some regularity results for elliptic operators with coefficients of fairly low regularity. Finally, we shall also comment on the impact of these results within mathematical general relativity.

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)