EBERHARD KARLS UNIVERSITÄT TÜBINGEN

Mathematisch-Naturwissenschaftliche Fakultät

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

Oberseminar
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den **25.07.2024** spricht um **14 Uhr s.t.** im Raum **S9 (C6H05) und über Zoom**

Dr. Markus Wolff
(KTH Royal Institute of Technology Stockholm)

über das Thema

Foliations of asymptotically Schwarzschildean lightcones
by surfaces of constant spacetime mean curvature

We construct asymptotic foliations of asymtotically Schwarzschildean lightcones by surfaces of constant spacetime mean curvature (STCMC). For a surface in an ambient spacetime, the spacetime mean curvature is defined as the (Lorentzian) length of the co-dimension 2 mean curvature vector. Asymtotic foliations of asymptotically flat spacelike hypersurfaces by STCMC surfaces have previously been constructed by Cederbaum-Sakovich.

Our construction is motivated by the approach of Huisken-Yau for the Riemannian setting in employing a geometric flow. We show that initial data within a sufficient a-priori class converges exponentially to an STCMC surface under area preserving null mean curvature flow. We further show that the resulting STCMC surfaces form an asymptotic foliation. This is joint work with Klaus Kröncke.

Den Zoom-Link erhalten Sie per E-Mail von 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)