EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

Mathematisch-
Naturwissenschaftliche
Fakultät

Fachbereich Mathematik
AB Geometrische Analysis,
Differentialgeometrie und
Relativitätstheorie

Oberseminar
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den **20.11.2025** spricht um **14 Uhr s.t.** im Raum **C4H33 und über Zoom**

Saradha Senthil-Velu

(Universität Tübingen)

über das Thema

Boosts of the STCMC Center of Mass

In this talk, we will briefly review definitions of center of mass and angular momentum for asymptotically Euclidean initial data sets. The focus is the behavior of the spacetime constant–mean–curvature (STCMC) center under boosts. After clarifying boost notions and motivating the physically correct one for charge evolution, we will see that in model graphical cases in Schwarzschild the STCMC center transforms exactly as expected, in contrast to the constant–mean–curvature (CMC) center. Beyond this model class, we establish the linearized boost law for infinitesimal boosts of the STCMC center. Altogether, the STCMC center fits naturally into the asymptotic Poincaré structure of the ambient spacetime: it transforms correctly under boosts without imposing strong Regge–Teitelboim parity conditions, only weaker decay/parity hypotheses.

Danach, **von 15:00 bis 16:00 Uhr**, spricht

Marcus Flook

(Australian National University)

über das Thema

Mean curvature flow analogues in Cauchy-Riemann (CR) Geometry

In this talk, I will introduce and motivate Cauchy-Riemann (CR) geometry by considering real hypersurfaces embedded in complex Euclidean space. Firstly, I will discuss progress on both Darboux- and Alexandrov-type theorems in this setting. Secondly, I will introduce flows of CR hypersurfaces that are analogous to the mean curvature flow. Alongside the standard degeneracy due to tangential diffeomorphisms, such flows have an additional degeneracy due to the CR structure which will be discussed. Finally, I will discuss joint research with Ben Andrews on new flows which preserve key components of the CR structure.

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.

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