Oberseminar
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Donnerstag, 27. Juli 2023 im Raum **S9 (C06H05) und über Zoom**

14:15 – 15:15 Uhr Vortrag

Anabel Miehe
(Universität Tübingen)

A proof of the Willmore inequality via a Robinson style argument

Abstract:
In the three-dimensional Euclidean space, a classical result about the geometry of smooth closed surfaces is the Willmore inequality, shown by Willmore in 1968, which gives a lower bound on the integral of the squared mean curvature over the surface. A generalization to higher dimensions was found by Chen and later also proved by Agostiniani and Mazzieri using a monotonicity formula. In this talk, we consider a Robinson style argument based on a divergence inequality to give another proof of the Willmore and in addition a weighted Minkowski inequality. This is joint work with Carla Cederbaum.

15:15 -15:45 Uhr Kaffee im Hankelzimmer

15.50 - 16.50 Uhr Vortrag

Gerhard Huisken
(Universität Tübingen)

Inverse mean curvature flow and Ricci-pinched 3-manifolds
(joint with Thomas Körber)

Abstract:
Let (M,g) be a complete, connected, non-compact Riemannian three-manifold with non-negative, uniformly pinched Ricci curvature. The lecture describes a new proof based on inverse mean curvature flow that (M,g) is either flat or has non-Euclidean volume growth. In conjunction with results of J. Lott and of M.-C. Lee and P. Topping, this gives an alternative proof of a conjecture of R. Hamilton recently proven by A. Deruelle, F. Schulze, and M. Simon using Ricci flow.

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)