



Oberseminar
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den **26.10.2023** spricht um **14 Uhr c.t.** im Hörsaal **N15 (C-Bau)** und über **Zoom**

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über das Thema

The Positive Mass Theorem for Asymptotically Flat Graphs in Euclidean Space and its Stability

Smooth functions with certain decay properties at infinity are called asymptotically flat functions. The graph of such a function with the induced metric from Euclidean space is an asymptotically flat Riemannian manifold in the usual sense and called an asymptotically flat graph in Euclidean space. We prove the Positive Mass Theorem for the class of asymptotically flat graphs in Euclidean space in all dimensions including the rigidity case. For the proof we follow the ideas of Lam for the nonnegativity of the ADM-mass and of Huang and Wu for the rigidity case. Also, we extract from the technique of the proof a scalar curvature result, which applies for the graph of a smooth function with certain decay properties embedded either in Euclidean space or in Minkowski space. Next, we give a brief introduction into the theory of currents. For these currents Federer and Fleming have defined a norm, called the flat norm. We show a concept how to interpret an asymptotically flat graph in Euclidean space as a current, which allows us to measure the distance between two asymptotically flat graphs in Euclidean space in the flat norm. We prove a stability result with respect to that distance for the class of asymptotically flat graphs in Euclidean space. For this result we follow the approach of Huang and Lee.

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)