



**Sommersemester 2021**

**Oberseminar  
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie**

Am Donnerstag, den **29.07.2021** spricht um **14:00** per Videoübertragung

**Dr. Henri Roesch**  
( Columbia University )

über das Thema

**Mean curvature flow in null hypersurfaces and the detection of MOTS**

In this talk I will describe recent work with Julian Scheuer studying the mean curvature flow of surfaces within 3-dimensional null hypersurfaces. In a spacetime a hypersurface is called null, if its induced metric is degenerate. The speed of the mean curvature flow of spacelike surfaces in a null hypersurface is the projection of the codimension-two mean curvature vector onto the null hypersurface. We impose fairly mild conditions on the null hypersurface. Then for an outer un-trapped initial surface, a condition which resembles the mean-convexity of a surface in Euclidean space, we prove that the mean curvature flow exists for all times and converges smoothly to a marginally outer trapped surface (MOTS).

**Hierzu wird herzlich eingeladen. Bei Interesse bitte per E-Mail an [angelika.spoerer-schmidle@uni-tuebingen.de](mailto:angelika.spoerer-schmidle@uni-tuebingen.de) wenden, um den Link zur Videoübertragung zu erhalten.**

Hierzu wird herzlich eingeladen.

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