Wintersemester 2017/18

Oberseminar
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den **02.11.2017** spricht um **15 Uhr c. t.** im Raum S9

Markus Wolff

über das Thema

The Roesch mass in static, spherical-symmetric spacetimes

The main subject of this presentation is a new mass, suggested by Henri Roesch, who used this mass to prove the Null Penrose Conjecture.

We will compute this mass on embedded spheres foliating the past pointing light cone of a narrow class of static, spherical-symmetric spacetimes following the computation of the Roesch mass of the Schwarzschild spacetime by Roesch.

Therefore we will first construct an extension of the spacetime analogous to the Kruskal extension for Schwarzschild, which requires additional assumptions on the metric of the corresponding spacetimes. The spacetime extension in lightlike coordinates allows an easy description of the past pointing light cone and therefore an easier computation of the Roesch mass.

Finally, using the assumed form of the metric, we find fairly easy conditions guaranteeing positivity of the Roesch mass, convergence towards the Bondi mass of the spacetime, and the Null Penrose Conjecture.

Hierzu wird herzlich eingeladen.

C. Cederbaum, G. Huisken