



Sommersemester 2016

**Oberseminar**  
**Geometrische Analysis, Differentialgeometrie und Relativitätstheorie**

Am Donnerstag, den 28.04.2016 spricht um 14 Uhr c. t. im Raum N14

**Dr. Julien Cortier**  
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über das Thema

**Mass-like invariants for asymptotically hyperbolic manifolds**

In this talk, we are interested in Riemannian manifolds which have an end whose geometry is asymptotic to the hyperbolic space geometry. Such situations occur in general relativity for some slices of asymptotically anti-de Sitter (adS) spacetimes. Similar to the Euclidean case, it is possible to define global quantities (mass and center of mass) under suitable decay rate assumptions. These quantities enjoy “asymptotic invariance” properties that we will review, and for which the group  $PO(n, 1)$  of isometries of the hyperbolic space plays a central role. We will then see how to construct other such asymptotic invariants when we relax the assumption on the decay rate. They are attached to finite dimensional representations of  $PO(n, 1)$ . We shall finally see how every such invariant is naturally linked to a curvature operator (e.g. the scalar curvature for the classical mass). This is based on a joint work with Mattias Dahl and Romain Gicquaud.

Hierzu wird herzlich eingeladen.

C. Cederbaum, G. Huisken