



Oberseminar
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den **23.10.2025** spricht um **14 Uhr s.t.** im Raum **C4H33** und über Zoom

Dr. Edward Bryden
(University of Antwerp)

über das Thema

The Spacetime Penrose inequality with non-optimal constant

Loosely speaking, the Penrose inequality is a relationship between the total mass present and the area of black holes. When working with initial data sets, we need a good standing for black holes; these will be outermost apparent horizons. Thus, for initial data sets the Penrose inequality can be interpreted as the following statement: mass is bounded below by a constant times the least area required to enclose an outermost apparent horizon. There are physical arguments which suggest a particular constant. In fact, G. Huisken and T. Ilmanen used inverse mean curvature to establish the optimal result in the time symmetric case. Additionally, H. Bray used a conformal flow to obtain another proof of the Penrose inequality in the time symmetric case. We will outline a proof of the Penrose inequality for general initial data sets, but for a constant which is far smaller than what should be optimal.

Den Zoom-Link erhalten Sie per E-Mail von Martina Neu.

For participating online, please sign up by sending an email to Martina Neu.

Hierzu wird herzlich eingeladen.

Rodrigo Avalos, Carla Cederbaum, Gerhard Huisken, zusammen mit Jan Metzger (Potsdam)