



## Oberseminar

### Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den **16.01.2025** spricht um **14 Uhr s.t.** im Raum **S9 (C6H05)** und über Zoom

**Alejandro Peñuela**  
(Universität Potsdam)

über das Thema

#### **Rigidity and Monotonicity of the Hawking Energy on Hawking Surfaces**

The Hawking energy is one of the simplest quasi-local energy definitions in general relativity. Despite its simplicity, the Hawking energy has faced challenges due to ambiguities when applied to general surfaces. In this talk, I will present my recent results demonstrating that the Hawking energy exhibits key physical and mathematical properties—non-negativity, rigidity, and monotonicity—when evaluated on Hawking surfaces, a class of critical surfaces of the Hawking functional. These results establish Hawking surfaces as useful tool for evaluating the Hawking energy and reinforce its potential as a meaningful tool for understanding gravitational phenomena.

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)