



**Promotionsvortrag am
31/07/2026, 11:00**

Gebäude: C Bau Raum: N14

Andoni Royo Abrego

**Coupled Geometric Flows and
Regularity Problems in Conformal Geometry**

Berichterstatter*in 1: Prof. Dr. Gerhard Huisken
Berichterstatter*in 2: Prof. Dr. Simon Brendle

In this presentation, we will discuss two distinct topics in geometric analysis. The first part is concerned with a coupled geometric evolution equation describing the deformation of a Riemannian metric and a gauge field on compact manifolds, which can be regarded as a coupling of the Yang-Mills flow to the Ricci flow. We will present several analytical results towards the study of singularity formation along the flow. In the second part of the talk, we will investigate existence and regularity properties of constant scalar curvature metrics in conformal classes of low regularity. Such problem reduces to the study of a semi-linear elliptic problem with rough coefficients and critical non-linearity. In particular, we will extend many of the results and techniques in the classical Yamabe problem to the setting of Riemannian metrics of Sobolev class.