



Wintersemester 2020/21

Oberseminar  
Geometrische Analysis, Differentialgeometrie und Relativitätstheorie

Am Donnerstag, den 18.02.2021 spricht um 15:30 per Videoübertragung

Prof. Dr. James Isenberg  
( University of Oregon )

über das Thema

**Some Recent Results on Ricci Flow**

We discuss the results of two recent collaborative works on Ricci Flow. The first of these results, done with Eric Bahuaud and Chris Guenther, shows that "convergence stability" holds for Ricci Flow solutions converging to the flat metric on the torus as well as for Ricci Flow solutions converging to the hyperbolic metric. Convergence stability tells us that if the Ricci flow starting at a metric  $h$  converges to a metric  $g$ , then it follows that the Ricci Flow starting at metrics sufficiently close to  $h$  (relative to a specified topology) must also converge to  $g$ . Convergence stability is a consequence of stability at  $g$  combined with long-time continuous dependence for the class of geometries including  $h$  and  $g$ . Our verification that convergence stability holds for the hyperbolic metric depends on geometric analysis results for asymptotically hyperbolic metrics contained in a specified weighted Holder space. The second of our results, done with Tim Carson, Dan Knopf and Natasa Sessum, involves the study of singularity formation at spatial infinity for Ricci Flow of certain multi-warped complete geometries on non-compact manifolds. We use this analysis to show that there is unexpected behavior of blowup sequences for Ricci Flows developing Type I singularities at spatial infinity. In particular, we find that some blowup sequences form gradient solitons, while others form ancient solutions which are not solitons.

**Hierzu wird herzlich eingeladen. Bei Interesse bitte per E-Mail an [angelika.spoerer-schmidle@uni-tuebingen.de](mailto:angelika.spoerer-schmidle@uni-tuebingen.de) wenden, um den Link zur Videoübertragung zu erhalten.**

Hierzu wird herzlich eingeladen.

C. Cederbaum, G. Huisken, K. Kröncke