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FAKULTÄT FÜR MATHEMATIK
Dekan Univ.–Prof. Dr. Harald Rindler

Einladung zur öffentlichen Defensio von

Markus Steenbock*

Thema der Dissertation:

**Kaplansky's zero divisor conjecture, $\text{CAT}(0)$
cubulation, and the unique product property**

Abstract: Small cancellation theory studies groups via conditions imposed solely on their presentations by generators and relators. Recently, the field was revolutionised by Gromov's graphical small cancellation theory, which he used to construct groups that contain an expander graph sequence in their Cayley graphs.

In my thesis, I further developed small cancellation theory tailored to study quotients of free products of groups. I will give an overview on my contributions, including a combination theorem for $\text{CAT}(0)$ cubulation in classical small cancellation theory over free products, and my variant of graphical small cancellation theory over free products.

To give applications, I will discuss examples of Gromov hyperbolic groups without the unique product property, as well as examples of such groups with Kazhdan's Property (T).

Prüfungssenat:

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