A U S H A N G

FREIE UNIVERSITÄT BERLIN
Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

D I S P U T A T I O N

Freitag, 26. Februar 2021, 9:30 Uhr

WebEx

Disputation über die Doktorarbeit von

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Thema der Dissertation:
Upper density problems in infinite Ramsey theory

Thema der Disputation:
A proof of the Erdős-Faber-Lovász conjecture

Die Arbeit wurde unter der Betreuung von **Prof. Dr. T. Szabó** durchgeführt.

Abstract:
Upper density problems in infinite Ramsey theory
Let H be an infinite graph. In a two-coloring of the edges of the complete graph on the natural numbers, what is the densest monochromatic subgraph isomorphic to H that we are guaranteed to find? We measure the density of a subgraph by the upper density of its vertex set. This question, in the particular case of the infinite path, was introduced by Erdős and Galvin. Following a recent result for the infinite path, we present bounds on the maximum density for other choices of H, including exact values for wide classes of bipartite graphs and infinite factors.

A proof of the Erdős-Faber-Lovász conjecture
The Erdős-Faber-Lovász conjecture states that every linear hypergraph on n vertices admits a proper edge-coloring on at most n colors. In a recent breakthrough, Kang, Kelly, Kühn, Methuku and Osthus proved that the conjecture holds for all large enough n. In this talk we will give an overview of their proof and discuss the techniques used therein, with emphasis on the proofs of two particular cases and two stability versions of the result.

Die Disputation besteht aus dem o. g. Vortrag, danach der Vorstellung der Dissertation einschließlich jeweils anschließenden Aussprachen.

Interessierte werden hiermit herzlich eingeladen

Der Vorsitzende der Promotionskommission
Prof. Dr. T. Szabó