

FIM Kolloquium

Am Dienstag, den 21. Januar 2025, hält

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einen Vortrag über das Thema

Limit Theories for Dense Discrete Structures – Graphons, Permutons, and Latinons

Ort: HS 11 IM, Zeit: 17.00 s.t.

Abstract: The rise of extremely large networks presents a significant challenge: understanding the global structure of a network that is too vast to be fully analysed. This leads to the following key question. What can be inferred about the overall network structure, if we have statistical data on the small structures observed when zooming into tiny areas of the network? In recent years, a promising research field has emerged that seeks to establish a theoretical framework for addressing these challenges by introducing the concept of limits for discrete structures. The goal is to identify a suitable limit object that accurately captures both the information from local sampling and the overall global behavior. This approach results in a fascinating interplay between analysis and combinatorics. In this talk we discuss the fundamental properties of a limit theory for combinatorial structures in the dense setting. As examples we introduce the limit notions for dense graphs and permutations and present some applications. Finally, we outline how to generalise this framework to the newly developed limit theory for Latin squares.

This overview is based on different collaborations with many co-authors.