Seminar
Topics in Graph Theory (Summer Semester 2022)

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Organizational meeting will take place on the 7th of February, 2PM, SR 2.059.
The announcement will be made in https://www.math.kit.edu/iag6/~axenovich/en

Description

In this seminar we shall consider a selection of topics in graphs theory including results that are classical as well as very recent. The seminar will be based mostly on research papers covering various techniques such as probabilistic and algebraic methods.

Topics

- Domination in 3-tournaments (Korandi, Sudakov, 2017)
- Hypergraph container method (Balogh-Morris-Samotij, 2018)
- Acyclic colorings of graphs (Alon, McDiarmid, Reed, 1991)
- Coloring graphs with sparse neighborhoods (Alon, Krivelevich, Sudakov, 1999)
- Degrees and choice number (Alon, 2000)
- Ramsey goodness of paths (Pokrovskiy, Sudakov, 2017)
- Graph separators (Lipton, Tarjan, 1980, Alon, Seymour, Thomas 1980)
- Inducibility of cycles (Kral, Norin, Volac, 2018)
- Lower bounds on multicolor Ramsey numbers (Conlon, Ferber, 2021)
- Random algebraic construction of extremal graphs (Bukh, 2016)
- Cycle packing (Conlon, Fox, Sudakov, 2014)
- Chromatic numbers are Ramsey distinguishing (Savery, 2019)
- Isomorphic subgraphs in a graph (Erdos, Pach, Pyber 1988)