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Borel Combinatorics

In this short course we aim to cover some basic results in the study of graph combinatorics from the point of view of descriptive set theory. Our emphasis will be on the methods used to prove theorems in this area. These methods include Baire category, forcing, compactness, hyperaperiodicity, and marker constructions. The results we present will include Borel and continuous chromatic numbers and edge chromatic numbers for the Schreier graphs of abelian group actions.

References:

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3. S. Gao, S. Jackson, E. Krohne and S. Seward, Forcing constructions and countable Borel equivalence relations, J. Symb. Logic 87 (2022), no. 3, 873-893.
4. S. Gao, S. Jackson, E. Krohne and S. Seward, Continuous combinatorics of abelian group actions, Mem. Amer. Math. Soc., to appear. Available at arXiv: 1803.03872.
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