

Chromatic Numbers, Independent sets, and Embedding Complexes

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Topological methods have been successfully applied to combinatorial problems that benefit from detecting global obstructions. I will explain how chromatic numbers of graphs and questions about fair representations by independent sets can be seen as a more rigid variant of the topological problem of embedding simplicial complexes into Euclidean space. This topological viewpoint gives optimal results in the combinatorial setting in several interesting cases.