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An Introduction to Graph Colouring with Randomness

Graph colouring is a classical field in graph theory and its applications that remains a central area of study in cutting edge research. This talk will introduce and motivate proper vertex colouring and some of its variants with a focus on how probabilistic techniques can be used to study these parameters. In particular we will describe the basic probabilistic method, then show several distinct ways that it can be applied to various graph colouring problems.