Abstract

Graph colouring occupies a central place in theory and applications, in combinatorics, computer science and OR. We shall discuss clique colouring a graph G; that is, colouring the vertices so that no maximal clique is monochromatic. The least possible number of colours is the clique colouring number $\chi_c(G)$. Typically, upper bounds on χ_c for random graphs are algorithmic. A key idea for clique colouring certain sparse random graphs is to construct triangle-free colour sets greedily. We shall discuss random perfect graphs, binomial random graphs and random geometric graphs. This is joint work with Nikola Yolov, and with Dieter Mitsche and Pawel Pralat.