Graz University of Technology

Institut für Diskrete Mathematik

Combinatorics Seminar

Friday 4th April 12:30

AE06, Steyrergasse 30

Coloring t-perfect graphs

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Perfect graphs can be described as the graphs whose stable set polytopes are defined by their non-negativity and clique inequalities (including edge inequalities). In 1975, Chvátal defined an analogous class of t-perfect graphs, which are the graphs whose stable set polytopes are defined by their non-negativity, edge inequalities, and odd circuit inequalities. We show that t-perfect graphs are 199053-colourable. This is the first finite bound on the chromatic number of t-perfect graphs and answers a question of Shepherd from 1995.

Our proof also shows that every h-perfect graph with clique number ω is $(\omega+199050)$-colourable.

This is joint work with Maria Chudnovsky, Linda Cook, James Davies, and Jane Tan.

Joshua Erde, Mihyun Kang, Ronen Wdowinski