

FIM Kolloquium

Am Dienstag, den 18. November 2025, hält

Matija Bucić

(Universität Wien und Princeton University)

einen Vortrag über das Thema

The spanning tree spectrum

Ort: (IM) HS 11, Zeit: 17 s.t.

Abstract: The number of spanning trees of a graph G , denoted $t(G)$, is a well-studied classical graph parameter with numerous surprising connections to various areas of mathematics and beyond, ranging from number theory, random matrix theory, to analysis of algorithms. Yet one of the most basic questions concerning this function remains open, namely, how large is the range of this function when evaluated over the set of all n -vertex graphs? In a recent remarkable paper, answering a question of Sedláček from 1969, Chan, Kontorovich, and Pak showed that $t(G)$ takes at least 1.1103^n many different values across simple (and planar) n -vertex graphs G , for large enough n , making use of a surprising connection to the theory of continued fractions. We give a very short, purely combinatorial proof that at least 1.49^n values are attained. We also prove that exponential growth can be achieved with regular graphs, determining the growth rate in another problem first raised by Sedláček in the late 1960s. Joint work with: Noga Alon and Lior Gishboliner.