Institut für Diskrete Mathematik

Seminar für Kombinatorik und Optimierung

Friday 19th March 16:30

Online meeting (Webex)

Flat Littlewood Polynomials Exist

Rob Morris

(IMPA)

In a Littlewood polynomial, all coefficients are either 1 or -1. Littlewood proved many beautiful theorems about these polynomials over his long life, and in his 1968 monograph he stated several influential conjectures about them. One of the most famous of these was inspired by a question of Erdős, who asked in 1957 whether there exist quot;flatquot; Littlewood polynomials of degree n, that is, with $|P(z)|$ of order $n^{1/2}$ for all (complex) z with $|z| = 1$.

In this talk we will describe a proof that flat Littlewood polynomials of degree n exist for all $n > 1$. The proof is entirely combinatorial, and uses probabilistic ideas from discrepancy theory.

Joint work with Paul Balister, Béla Bollobás, Julian Sahasrabudhe and Marius Tiba.

Meeting link:

https://tugraz.webex.com/tugraz/j.php?MTID=me01f43109c693c884b459339d643d7d9

Meeting number: 121 128 5385

Password: e8pQ8ZBQN4B

Joshua Erde, Mihyun Kang