

On the Integrality of Some P-recursive Sequences

mercredi 19 novembre 2025 14:00 (50 minutes)

I revisit the integrality criterion for Motzkin-type sequences due to Klazar and Luca, and propose a unified approach for analysing global boundedness and algebraicity within a broader class of holonomic sequences. The central contribution is an algorithm that finds all algebraic solutions of certain second-order recurrence relations with linear polynomial coefficients. As algebraicity and global boundedness are shown to be equivalent in the special cases considered, the method detects all globally bounded solutions as well. This offers a systematic approach to deciding when a given P-recursive sequence is integral or almost integral - a question that arises naturally in combinatorics and differential algebra.

Based on joint work with Alin Bostan.

Orateur: MATVEEVA, Anastasia (École polytechnique)