Vienna School of Mathematics

PhD Colloquium

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Broken dreams of bounds for integer roots

Abstract: Given the coefficients of a polynomial in one variable it is easy to compute an upper bound $R > 0$ for the absolute value of the roots of the polynomial. Consequently, there is an algorithm that takes as input the coefficients of a polynomial and outputs $R > 0$ such that, if the polynomial has an integer root, the polynomial has an integer root with absolute value less than R.

The talk focuses on the search for a generalization of this algorithm to handle polynomials in multiple variables. Along the way, Gödel's second incompleteness theorem and Hilbert's tenth problem will make an appearance.

April 7 2025, 15:30-16:30
TUForMath Room DAEGH18, Freihaus, TU Wien
(Wiedner Hauptstraße 8-10)