

# TOWARDS VAN DER WAERDEN'S CONJECTURE

RAINER DIETMANN (Royal Holloway, University of London)

ABSTRACT: Last summer, there was a lot of activity regarding an old conjecture of van der Waerden, culminating in its solution by Bhargava, and including joint work by Sam Chow and myself on which I want to report in this talk: We showed that the number of irreducible monic integer polynomials of degree  $n$ , with coefficients in absolute value bounded by  $H$ , which have Galois group different from  $S_n$  and  $A_n$ , is of order of magnitude  $O(H^{n-1.017})$ , providing that  $n$  is at least 3 and is different from 7, 8, 10. Apart from the alternating group and excluding degrees 7, 8, 10, this establishes the aforementioned conjecture to the effect that irreducible non- $S_n$  polynomials are significantly less frequent than reducible polynomials.

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