Seminar/Talk

The density of polynomials of degree n over Zp that have exactly r roots in Qp

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Host: Tim Browning

Let f be a random polynomial in Zp[x] of degree n. We determine the density of such polynomials f having exactly r roots in Qp. We also determine the expected number of roots of monic polynomials f in Zp[x] of degree n, and, more generally, the expected number of sets of exactly d elements consisting of roots of such f. We show that these densities are rational functions in p and discuss the remarkable symmetry phenomenon that occurs and some asymptotic results. This is joint work with Manjul Bhargava, John Cremona, and Tom Fisher.

Thursday, April 13, 2023 01:00pm - 03:00pm
Heinzel Seminar Room (I21.EG.101), Office Building West, ISTA

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