RANDOM REAL ALGEBRAIC GEOMETRY AND RANDOM AMEOBAS

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Classical problems in algebraic geometry concern invariant or extremal properties of algebraic varieties whereas in the probabilistic version we focus on statistical properties of the fundamental invariants. For example, a real algebraic projective plane curve of degree d has at most $g+1 = (d-1)(d-2)/2+1$ connected components where g denotes the genus, which is an extremal property; whereas a random real algebraic projective degree d plane curve in a suitable precise sense (to be explained in the talk) has an expected number of connected components of order d. In this talk, I will discuss some recent results on the statistical properties of connected components and amoebas of random algebraic varieties. The talk is based on a joint works with Emel Karaca, and another joint work with Özgür Kişisel.

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