ODTU-Bilkent Algebraic Geometry

Random Algebraic Geometry and Random Amoebas

By

Ali Ulaş Özgür Kişisel
(ODTÜ)

Abstract: Random algebraic geometry studies variable properties of typical algebraic varieties as opposed to invariant properties or extremal properties. For instance, a complex algebraic projective plane curve is always topologically connected, which is an invariant property; a real algebraic projective plane curve of degree d has, by a classical theorem of Harnack, at most $g+1=(d-1)(d-2)/2+1$ connected components where g denotes 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 first present the setup and some of the main known results of the field of random algebraic geometry. I will then proceed to discuss some of our results on the expected properties of amoebas of random complex algebraic varieties, based on a joint work with Turgay Bayraktar, and another joint work with Jean-Yves Welschinger.

Date: 24 November 2023, Friday
Time: 15:40 (GMT+3)
Place: Zoom

To request the event link, please send a message to sertoz@bilkent.edu.tr