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MATHEMATICS DAYS VIII

10.30-11.30: Özlem Beyarslan (Boğaziçi University)

Model theory of group actions on fields

11.30-12.30: Umut Varolgüneş (Koç University)

What is mirror symmetry?

12.30-13.30: Lunch Break

13.30-14.30: Gökalp Alpan (Sabancı University)

Lower bounds for extremal polynomials

14.30-15.30: M. Yasir Kızmaz (Bilkent University)

A generalization of Alperin Fusion theorem and its applications

Date : Friday, October 18, 2024

Place: Boğaziçi University Mathematics Department TB130, South Campus

Mathematics Days VIII

Bogazıcı University
İstanbul, Turkey

October 18, 2024



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Lower bounds for extremal polynomials

Gökalp Alpan
Sabancı University

In this talk, I will discuss weighted Chebyshev polynomials and orthogonal polynomials, with a special emphasis on the real line. The weighted Chebyshev polynomials are the monic polynomials that minimize the weighted sup-norm on a given set and monic orthogonal polynomials minimize the L^2 norm associated with a Borel measure. I will survey results involving the lower bounds of the norms of the extremal polynomials mentioned above. I will also discuss some recent results on asymptotics for the lower bounds, which generalize some classical results.

Model theory of group actions on fields

Özlem Beyarslan
Boğaziçi University

We study the generic actions of groups on fields: the purpose is finding axiomatizations of these theories. After setting the history of the problem, we will give an account of the class of groups whose actions we have studied. This is joint work with Piotr Kowalski.

A generalization of Alperin Fusion Theorem and its applications

M. Yasir Kızmaz
Bilkent University

In this talk, we will begin by recalling Alperin-Goldschmidt fusion theorem and its importance in group theory and fusion systems. Then we give our extension of this theorem and discuss its new applications.

What is mirror symmetry?

Umut Varolgüneş
Koç University

Around 1990 a group of physicists made a striking mathematical discovery. They computed the number of rational curves of a given degree in a quintic threefold by considering a simpler problem of an entirely different nature involving a different Calabi-Yau threefold whose Hodge diamond looks like a certain reflection of that of the quintic. This duality was dubbed mirror symmetry and it led to a flurry of activity in mathematics. I will give a summary of the developments that ensued with a bias towards the impact on symplectic geometry and my own research.
