NCTS
National Center for Theoretical Sciences

MSRI-NCTS
Joint Summer School on Toric Varieties

V_3

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V_1

V_4

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3

V_2

Date 2019.7.29~8.9 (Weekdays) 9:00~17:00

Venue National Center for Theoretical Sciences

Speakers

David Cox (University of Massachusetts, Amherst)
Henry Schenck (Iowa State University)

Description

Toric varieties are algebraic varieties defined by combinatorial data, and there is a wonderful interplay between algebra, combinatorics and geometry involved in their study. Many of the key concepts of abstract algebraic geometry (for example, constructing a variety by gluing affine pieces) have very concrete interpretations in the toric case, making toric varieties an ideal tool for introducing students to abstruse concepts.

Suggested Prerequisites

- Chapters 1,2,3,4,5,8 of "Ideals, Varieties and Algorithms" and Sections 1.0, 2.0, 3.0, 4.0 and 6.0 of "Toric Varieties" (Section 0 of these chapters is a background section that discusses algebraic geometry with no knowledge of toric varieties required). An alternative to the Sections 0 would be "Introduction to Algebraic Geometry", available at https://dacox.people.amherst.edu/.
- Chapters 1,2,3,4 of Ravi Vakil's excellent text "Foundation of Algebraic Geometry", freely available at math.stanford.edu/~vakil/216blog/FOAGjun1113public.pdf
- Chapters 1 and 2 of Hartshorne's "Algebraic Geometry".