# Alexander Barvinok University of Michigan April 24 · 25 · 26 4:30-5:30pm Lectures: Rm. 2-190 Reception: 4pm, Rm. 2-290

### Combinatorics, complexity and complex zeros of partition functions

### Lecture 1

How (and why) we compute really big polynomials

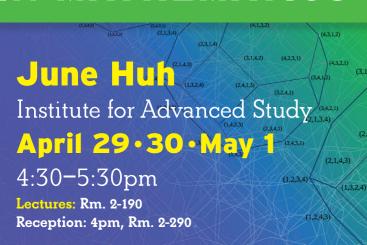
### Lecture 2

More examples from combinatorics and statistical physics

### Lecture 3

Computational complexity and physics: diverging paths?

## SIMONS LECTURES IN MATHEMATICS 2019



### Lorentzian polynomials

### Lecture 1

The space of Lorentzian polynomials

### Lecture 2

Discrete convexity and continuous convexity: a tropical connection

### Lecture 3

Hodge-Riemann relations for Potts model partition functions and other examples



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(1,2,3,4)

(1,2,4,3)

(3,1,4,2)

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(1,4,2,3)

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