Geometry Seminar

Geometric Probability and Phase Transitions in Conic Optimization

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Abstract

Integral geometry and geometric probability, going back to the work of Blaschke and Santaló, deal with measures on spaces of geometric objects, and can answer questions about the probability that random geometric objects intersect. This talk discusses various applications of (spherical) integral geometry in optimization: from the complexity theory of conic optimization to the analysis of convex regularization approaches to difficult inverse problems. In particular, it is shown how geometric probability, in combination with concentration of measure, naturally gives rise to a complete explanation of phase transition phenomena arising in convex optimization. Time permitting, I will also discuss relations to algebraic combinatorics and geometric functional analysis.

Joint work with Dennis Amelunxen (City University Hong Kong), Michael B. McCoy, Joel A. Tropp (Caltech)

Date:	August 18, 2016 (Thursday)
Time:	4:00 – 5:00pm
Place:	Room 210, Run Run Shaw Bldg., HKU

All are welcome