



# THE UNIVERSITY OF CHICAGO

Department of Statistics

## SCIENTIFIC AND STATISTICAL COMPUTING SEMINAR

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### Local Versus Global Conditions in Polynomial Optimization

THURSDAY, February 26, 2015 at 4:30 PM  
133 Eckhart Hall, 5734 S. University Avenue

#### ABSTRACT

This talk compares local and global conditions for polynomial optimization problems. First, we review the classical local optimality conditions: constraint qualification, strict complementarity and second order sufficiency conditions. We show that they are always satisfied, except a zero measure set of input data. Second, we review global optimality conditions that are expressed by sum-of-squares type representations. We show that if the above classical local optimality conditions hold, then the sum-of-squares type global optimality conditions must be satisfied. Third, we review Lasserre's hierarchy for solving polynomial optimization, and show that it always has finite convergence, except a zero measure set of input data.

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#### Organizers:

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