



# THE UNIVERSITY OF CHICAGO

Department of Statistics

## SCIENTIFIC AND STATISTICAL COMPUTING SEMINAR

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Condition Number for Random Polynomial Systems

THURSDAY, March 31, 2016 at 4:30 PM  
133 Eckhart Hall, 5734 S. University Avenue

### ABSTRACT

The condition number of a polynomial system measures the sensitivity of its roots to perturbations in the coefficients. We study the condition number of random polynomial systems for a broad family of distributions. Our work is motivated by Smale's 17th problem on the complexity of polynomial system solving. We present a brief overview of current state in Smale's 17<sup>th</sup> problem then proceed with our recent results on average conditioning.

This is joint work with J. Maurice Rojas and Grigoris Paouris.

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