THE UNIVERSITY OF CHICAGO

COMPUTATIONAL AND APPLIED MATHEMATICS COLLOQUIUM

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Certification of Approximate Roots of Ill-Posed Polynomial Systems

THURSDAY, October 5, 2017, at 5:00 PM
Jones 226, 5747 South Ellis Avenue

ABSTRACT

I will survey some of our recent work on certifying approximate roots of exact polynomial systems and will describe some applications. The difficulty lies in the fact that in many of the applications the polynomial system is overdetermined or singular, and consistency and singularity are not continuous properties, so traditional numerical certification techniques do not work. Our certification method is based on hybrid symbolic-numeric techniques.

This is a joint work with Tulay Akoglu, Jonathan Hauenstein and Bernard Mourrain.