



THE UNIVERSITY OF
CHICAGO

COMPUTATIONAL AND APPLIED MATHEMATICS COLLOQUIUM

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Tensor Decomposition and Moment Varieties

THURSDAY, October 4, 2018, at 4:00 PM
Jones 226, 5747 South Ellis Avenue

ABSTRACT

Tensor decomposition problems have applications in many domains and are nowadays investigated from many perspectives. In this talk, an algebraic point of view on tensor decomposition problems will be presented. We will show how the decomposition problem is connected to the representation of series as sums of polynomial-exponential series. Exploiting properties of Artinian Gorenstein Algebras we will describe an effective decomposition algorithm for low rank tensor decomposition and illustrate it on some examples.

A challenging question for better understanding the geometry of tensor decomposition is how to characterize tensors with a bounded rank. Contrarily to the matrix case, the answer is not simple at all, and many problems are open. We will present some results, which describe tensors with decompositions of some types as explicit algebraic varieties of moments. We will show how to exploit it in decomposition algorithms on some examples.

Organizers:

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CAM Colloquium URL: <https://cam.uchicago.edu/seminars/colloq/index.shtml>.

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