

## Computer Science/Discrete Mathematics Seminar I

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Diffuse Decompositions of Polynomials

**Series:** Computer Science/Discrete Mathematics

Daniel Kane

Stanford University

**Date & Time:** Mon, 04/22/2013 - 11:15 - 12:15

**Location:** S-101

**Video Link:**

<http://video.ias.edu/csdm/1213/0422-DanielKane>

We study some problems relating to polynomials evaluated either at random Gaussian or random Bernoulli inputs. We present some new work on a structure theorem for degree- $d$  polynomials with Gaussian inputs. In particular, if  $p$  is a given degree- $d$  polynomial, then  $p$  can be written in terms of some bounded number of other polynomials  $q_1, \dots, q_m$  so that the joint probability density function of  $q_1(G), \dots, q_m(G)$  is close to being bounded. This says essentially that any abnormalities in the distribution of  $p(G)$  can be explained by the way in which  $p$  decomposes into the  $q_i$ . We then present some applications of this result.

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Wed, 12/05/2012 - 14:45

Wed, 04/17/2013 - 14:50

terms:

- [CSDM Seminars](#)