UCR

Mathematics

Department

Special Colloquium in Applied Math

SPEAKER: DR. KEVIN COSTELLO OF G.I.T.

"Polynomial Littlewood-Offord Problems"

Abstract:

Consider a polynomial f(x_1, x_2, ..., x_n) which depends "non-trivially" on a large number of independent random inputs. We would intuitively expect this polynomial to become more dispersed as the number of inputs increases, and would like to quantify this dispersion. For example, if we independently set each input to either 1 or -1, what is the maximum concentration of f on one value (or in one small interval), and what polynomials come close to achieving this bound? When f is a linear polynomial, this is a question raised by Littlewood and Offord and answered by Erdos: The maximum concentration of O(n^{-1/2}) is achieved when all of the coefficients of f are equal in magnitude. Here we will consider the question where f is a bilinear or quadratic form, along with conjectured answers for higher degree polynomials and alternative definitions of "non-trivially".

Tuesday, February 22nd, 2011

Surge Building, Room 284

Tea, Coffee and Cookies @ 3:40pm

Talk begins @ 4:00pm - Ends @ 5:00pm

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