

UNIVERSITY OF PUERTO RICO
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FACULTY OF NATURAL SCIENCES
DEPARTMENT OF MATHEMATICS

Title: Asymptotic behavior of the exponential sum of perturbations of symmetric polynomials

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Abstract

In this talk we consider perturbations of symmetric boolean functions $\sigma_{n,k_1} + \cdots + \sigma_{n,k_s}$ in n -variable and degree k_s . We compute the asymptotic behavior of boolean functions of the type

$$\sigma_{n,k_1} + \cdots + \sigma_{n,k_s} + F(X_1, \dots, X_j)$$

for j fixed. In particular, we characterize all the boolean functions of the type

$$\sigma_{n,k_1} + \cdots + \sigma_{n,k_s} + F(X_1, \dots, X_j)$$

that are asymptotic balanced. We also present an algorithm that computes the asymptotic behavior of a family of Boolean functions from one member of the family. Finally, as a byproduct of our results, we provide a relation between the parity of families of sums of binomial coefficients.

Thursday, March 21, 2013
11:30 am - 12:30 pm
A-225