Seminar on Combinatorial Computing
March 7, 2001, Wednesday, 6:30 p.m.
Room 8405, Graduate Center
365 Fifth Avenue, New York

Equilateral sets

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Abstract

A subset of a metric space is equilateral if every pair of points in the set determines the same distance. I will discuss some extremal results concerning these sets. For example, in an n-dimensional normed linear space, the maximum size of an equilateral set is 2^n. In the Euclidean norm, it is $n+1$. Kusner conjectured in 1983 that the answer is also n+1 in the L^p norm, $1 < p < \infty$. I will give a new upper bound of order $n^((p+1)/(p-1))$, using linear algebra and Jackson's theorem on approximating a function by polynomials.

For further information contact Janos Pach at pach@cims.nyu.edu, or visit our website: http://www.math.nyu.edu/ pach/combinatorics_seminar.html