Seminar on Combinatorial Computing
March 6, 2002, Wednesday, 6:30 p.m.
Room 6417, Graduate Center
365 Fifth Avenue, New York

Ramsey-type problems in additive number theory

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Abstract

An old and famous conjecture of Roth, Erdős, Sárközy and Sós states that if one colors the numbers $1, 2, \ldots, N$ with colors $1, 2, \ldots, k$, then at least one color class must contain two elements i and j such that $i + j = x^2$ for some x. They were able to prove it for $k = 3$. Using the method of trigonometrical sum and some combinatrial ideas, we will show that the conjecture is true for all k. We will also prove that x^2 can be replaced by any polynomial $f(x)$ with integer coefficients such that $2|f(z)$ for some z. This is a joint work with Endre Szemerédi

For further information contact Janos Pach at pachcims.nyu.edu, or visit our website: http://cs.gc.cuny.edu/ pach/