Seminar on Combinatorial Computing
October 20, Wednesday, 6:30 p.m.
Room 6421, Graduate Center
365 Fifth Avenue, New York

ETR and some elementary geometric problems

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Abstract

The Existential Theory of the Reals (ETR) is the algorithmic problem to decide whether a system of polynomial equations and inequalities in k variables has a solution in R^k.

In the past few years many elementary and apparently simple geometric problems have been shown to be related to ETR in surprising ways. Among these are whether two point configurations of the same order type are isotopic, whether a pseudoline arrangement is "equivalent" to an arrangement of straight lines. We shall discuss these problems as well as other related problems involving linkages and polytopes.

This talk will be an elementary introduction to the topic and the related geometric problems.

For further information contact Janos Pach at pach@cims.nyu.edu,
or visit our website: http://math.gc.cuny.edu/Seminars/Combinatorics.html