THE POLYNOMIAL METHOD IN COMBINATORICS.

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Abstract

Abstract: In the last five years, several difficult combinatorial problems have been solved by an unexpected argument using polynomials. The combinatorial problems involved have to do with the way that lines intersect in Euclidean space. We will discuss the example of the joints problem - a problem about the intersections of lines in 3-dimensional space. This problem was posed in the early 90’s and was open for close to twenty years. We now have a one page proof, which I want to explain in detail.

Why are polynomials useful in these questions? I’m not sure that I understand, but I’ll discuss this question from one or two perspectives.

After that, I’ll discuss some of the other applications of the polynomial method, including the Erdős distinct distance problem for points in the plane.

Wednesday, 9 November 2011
4:00 pm
Smith Hall 204
Tea and refreshments will be served at 3:45pm.

http://math.newark.rutgers.edu/~xiaowwan/Colloquium/