

1116-05-244

Zeev Dvir* (zdvir@princeton.edu). *Sets of points with many collinear triples: a theorem and variations.*

The Sylvester-Gallai theorem states that in any set of points in the real plane, not all on the same line, there exists a line passing through only two of the points. In this talk I will describe several natural variants of this theorem and the techniques used to prove them. These include the complex and finite field versions, quantitative variants and variants in which points are replaced with k dimensional subspaces. If time permits, I will also discuss applications of these theorems to the theory of error correcting codes. (Received August 17, 2015)