Public Abstract

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Graduation Term:SP 2010

Department:Mathematics

Degree:PhD

Title:FINITE POINT CONFIGURATIONS AND PROJECTION THEOREMS IN VECTOR SPACES OVER FINITE FIELDS

We study a variety of geometric combinatorial problems in vector spaces over finite fields related to distance and dot product sets. In fact, some of our problems can be viewed as a finite field analog of the classical Erdos and Falconer distance problems. Our results show that if a set of points is large enough, then certain geometric properties hold. We improve on previously established results by reducing the threshold assumption on the size of the set.