Public Abstract
First Name:David
Middle Name:John
Last Name:Covert
Adviser's First Name:Alex
Adviser's Last Name:Iosevich
Co-Adviser's First Name:
Co-Adviser's Last Name:
Graduation Term:SP 2011
Department:Mathematics
Degree:PhD
Title:Geometric Combinatorics in Discrete Settings

A large class of problems in Geometric Combinatorics asks one to show that if a given set is sufficiently large, then it contains certain geometric properties. We study this phenomenon in the setting of finite fields and in the ring of integers modulo q. We obtain results about k-point configurations in the setting of finite fields, and we obtain results concerning variants of the sum-product problem in finite fields and the integers modulo q.