

Lucas Sabalka (Binghamton)

Projection-Forcing Multisets of Weight Changes

Abstract for the Combinatorics Seminar 2009 February 3

Let F be a finite field. The *Hamming weight* of a vector is the number of nonzero entries. A multiset S of integers is called *projection forcing* if every linear map $\varphi: F^n \rightarrow F^m$, whose multiset of weight changes, $\{w(\varphi(v)) - w(v)\}$, is S , is a coordinate projection up to permutation of entries. The MacWilliams Extension Theorem from coding theory says that $S = \{0, 0, \dots, 0\}$ is projection forcing.

In work with Josh Brown Kramer, we give a (super-polynomial) algorithm to determine whether or not a given set S is projection forcing. We also give a condition that can be checked in polynomial time that implies that S is projection forcing.

From:

<https://www2.math.binghamton.edu/> - **Binghamton University Department of Mathematical Sciences**

Permanent link:

<https://www2.math.binghamton.edu/p/seminars/comb/abstract.200902sab>

Last update: **2020/01/29 19:03**

