New Results on Projections

Guy Moshkovitz (Institute for Advanced Study)

What is the largest number of projections onto $k$ coordinates guaranteed in every family of $m$ binary vectors of length $n$? This fundamental question is intimately connected with important topics and results in combinatorics and computer science (Turan numbers, the Sauer-Perles-Shelah Lemma, the Kahn-Kalai-Linial Theorem), and is generally wide open. We essentially settle the question for a wide range of parameters (linear $k$ and sub-exponential $m$).

Based on joint work with Noga Alon and Noam Solomon.