



THE WEIZMANN INSTITUTE OF SCIENCE  
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE  
Geometric Functional Analysis and Probability Seminar

Room 261 ,Ziskind Building  
on Thursday, Jan 07, 2016  
at 11:05

Shamgar Gurevitch  
University of Wisconsin

### Low Dimensional Representations of Finite Classical Groups

Abstract:

Many questions about properties of a finite group such as random walks, spectrum of Cayley graphs, distribution of word maps etc., can be approached by using “generalized Fourier sum” formulas involving characters of the group. Numerical data show that characters of low dimensional representations of the group contribute the largest terms to these sums. However, relatively little seems to be known about these small representations so a systematic knowledge of them could lead to proofs of some of the properties. The talk will demonstrate, through concrete examples, and numerical simulations, a new method to construct and analyze those small representations, and hence hopefully to solve some of the aforementioned questions.

The talk is intended for non-experts.

This is part from a joint project with Roger Howe (Yale).