

ALGEBRA
ALGEBRA AND NUMBER THEORY

Finite Field Fourier Transforms in Arithmetic Statistics

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Abstract: In many arithmetic statistics problems, it is useful to evaluate or bound certain Fourier transforms over finite fields. I will give an overview of (1) how these Fourier transforms arise, (2) some strategies that my collaborators and I (and others!) have developed to analyze them, and (3) some surprising structures one finds.

Some of this work is older, but I will focus on forthcoming work with Anderson and Bhargava in Bhargava's averaging method, and recently finished work with Ishitsuka, Taniguchi, and Xiao on binary quartic forms.

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Mathematics and Science Center: MSC W303

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