

Multilinear exponential sums with a general class of weights

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Abstract. In this paper we obtain some new estimates for multilinear exponential sums in prime fields with a more general class of weights than previously considered. Our techniques are based on some recent progress of Shkredov in Additive Combinatorics with roots in Rudnev's point plane incidence bound. We apply our estimates to obtain new results concerning exponential sums with sparse polynomials and Weyl sums over small generalized arithmetic progressions.

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