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Scott T. Parsell* (sparse11@butler.edu), Department of Mathematics, Butler University, 4600 Sunset Ave., Indianapolis, IN 46208. *New estimates for multidimensional Weyl sums*. Preliminary report.

We discuss new upper bounds for exponential sums over several variables that arise in studying linear spaces of solutions to additive equations. We also describe asymptotic formulas for relatively small even moments of these sums, focusing on explicit results for particular values of the dimension and degree. (Received September 20, 2007)