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Steven Simon* (ssimon2@wellesley.edu). *G-Ham Sandwich Theorems: Harmonic Analysis on Finite Measures.*

The Ham Sandwich Theorem asserts that any n finite measures on \mathbb{R}^n can be bisected by a single hyperplane. Giving this theorem a \mathbb{Z}_2 -interpretation, we provide group-theoretic generalizations - *G*-Ham Sandwich Theorems - of this most famous result of equipartition theory, showing in a general sense how finite measures on Euclidian space can be “*G*-balanced” with respect to finite linear representations of a Lie Group *G*. For abelian groups, this balancing of measures has a harmonic analysis interpretation in terms of the vanishing of Fourier coefficients, from which measure partitions by convex fundamental domains (e.g., in the case *G* is a finite abelian group, by the regions determined by multiple regular *p*-fans for varying $p \geq 2$) follow as special cases. (Received September 17, 2013)