1116-05-529   **Steven Simon*** (`ssimon2@wellesley.edu`). *Topological Combinatorics via Finite Fourier Analysis.*

Methods of equivariant topology have been successfully applied in recent years to a variety of problems in geometric combinatorics, especially to those concerning measure equipartitions (generalizations of the ham sandwich-theorem: any d masses in $\mathbb{R}^d$ can be bisected by a single hyperplane) and point partitions of a Tverberg-type (generalizations of Radon's theorem: any $d + 2$ points in $\mathbb{R}^d$ can be partitioned into two sets with overlapping convex hulls). Reformulating these problems and their topological reductions in terms of harmonic analysis on finite groups, we will show how a variety of both classical and new partition theorems can be obtained as the annihilation of prescribed Fourier transforms. (Received September 05, 2015)