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Josiah Park* (j.park@gatech.edu), Georgia Institute of Technology, 686 Cherry St NW, Atlanta, GA 30332. *Symmetry and dimensionality for generalized frame energies.*

How does one spread lines (through the origin), or points on a sphere so as to minimize energy? We recently observed peculiarities in limiting problems of the above type, proving through linear programming methods that tight designs appear as discrete minimizers for “frame-like” continuous energies. These observations are an extension of a type of “universality” behavior that such configurations are now well-known to exhibit. A large question that remains is what can be said about the dimensionality of minimizers of such energies, and more generally how such information can be extracted from characteristics of the associated potential function for an interaction energy. I will talk about developments in this area as represented in work with D. Bilyk, A. Glazyrin, R. Matzke and O. Vlasiuk. (Received September 17, 2019)