

1154-31-2015

Dmitriy Bilyk, Alexey Glazyrin, Ryan W Matzke* (matzk053@umn.edu), **Josiah Park** and **Oleksandr Vlasiuk**. *Minimization of the p -frame energy.*

The p -frame energy on the sphere \mathbb{S}^d of a Borel probability measure μ is defined by the integral

$$I_p(\mu) \int_{\mathbb{S}^d} \int_{\mathbb{S}^d} |\langle x, y \rangle|^p d\mu(x) d\mu(y).$$

Under the p -frame potential, points repel each other when they are close but attract each other when they are far apart. In particular, the energy between two points is minimized when the points are orthogonal. This gives the problem of finding minimizers a distinct flavor, as most energy optimization problems involve energies, such as the Riesz energy, that are minimized by points being antipodal. We give a survey of recent results in minimization of the p -frame potential. (Received September 17, 2019)