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Brian Simanek* (brian.z.simanek@vanderbilt.edu), Vanderbilt Math Department, 1326 Stevenson Center, Nashville, TN 37240. *Optimal Polarization for Integrable Kernels.*

Polarization problems fall into the general category of optimal point placement on manifolds.

Let f be a lower semi-continuous and non-negative function and \mathcal{A} a compact manifold. Every point a in \mathcal{A} generates a potential on \mathcal{A} given by $f(|\cdot - a|)$. The optimal polarization problem consists of finding finite sets of points in \mathcal{A} so that the minimum of the potential they generate is as large as possible. Our main result shows that if the function f is integrable (in the appropriate sense) and satisfies some other mild assumptions, then we can characterize the asymptotic distribution of optimal polarization configurations as the number of points tends to infinity. (Received September 15, 2014)