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**RUSTUM CHOKSI**, McGill University

*Nonlocal Energy Functionals Consisting of Competing Attractive and Repulsive Potentials*

We consider existence and properties of minimizers for a class of nonlocal functionals consisting of power-law attractive and repulsive potentials. We will address different cases where these functionals are defined over measures, functions, and binary functions (set interactions). Comparison will be made with minimizers of a high-order isoperimetric problem with nonlocal interactions of Coulombic type. This is joint work with I. Topaloglu (McMaster University) and, in part, R. Fetecau (Simon Fraser University).