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Almut Burchard* (almut@math.toronto.edu), Department of Mathematics, 40 St. George Street, Rm. 6290, Toronto, ON M5S 2E4, Canada. *A geometric stability result for Riesz-potentials*. Preliminary report.

Riesz' rearrangement inequality implies that integral functionals (such as the Coulomb energy of a charge distribution) which are defined by a pair interaction potential (such as the Newton potential) that decreases with distance are maximized (under appropriate constraints) only by densities that are radially decreasing about some point. I will describe recent and ongoing work with Greg Chambers on the stability of this inequality for the special case of the Riesz-potentials in n dimensions (given by the kernels $|x - y|^{-(n-\lambda)}$), for densities that are uniform on a set of given volume. For $1 < \lambda < n$, we bound the square of the symmetric difference of a set from a ball by the energy difference of the corresponding uniform distributions. (Received September 17, 2019)