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Almut Burchard* (almut@math.toronto.edu), 40 St. George Street, R. 6290, Toronto, Ontario M5S 2E4, Canada. *On a non-local shape optimization problem related to swarming.*

I will discuss recent work with Rustum Choksi and Ihsan Topaloglu on a shape optimization problem where the energy functional is given by an attractive/repulsive interaction potential in power-law form. A natural conjecture is that balls minimize this energy for large mass, and minimizers fail to exist if the mass falls below a certain critical threshold. We have partial results that support this view. (Received August 29, 2016)