

1145-70-2403

**Robert Paul Volkin\*** (rpv17@case.edu). *Entropy and  $L^p$  Convergence of the Pseudo-Inverses for CDFs of Solutions to the Radially Symmetric Aggregation Equation With Power Law Potential.* Preliminary report.

The aggregation equation with repulsive-attractive potential models the evolution of a (probability) density of particles that attract each other at long range but repel each other when close. These nonlocal interaction equations have a number of applications in biological and physical contexts. We numerically investigate the entropy and  $L^p$  convergence of the pseudo-inverses to the cumulative density functions for solutions to the aggregation equation. In the particular, we consider the radially symmetric case with power law potential. We demonstrate that when solutions are sufficiently close, they converge in the  $L^p$  sense to the exact equilibrium densities exponentially quickly.

This work is in collaboration with D. Balagué<sup>1</sup>, A. Barbaro<sup>1</sup>, and J. Carrillo<sup>2</sup>.

(Received September 25, 2018)