Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Usefulness and limits of equilibrium mappings for confined active particles[1] YAOUEN FILY, APARNA BASKARAN, MICHAEL HAGAN, Brandeis Univ — Predicting the response of active particles to external potentials is notoriously difficult. Gaussian colored models have recently allowed some progress, including a systematic way to map an active system onto an equilibrium one. When the external potential represents hard walls, another approach exists, which tracks the dynamics along the walls. I will compare the analytical predictions of these two approaches with each other and with numerical simulations of various active particles (Gaussian colored noise, active Brownian, run-and-tumble) and discuss what they tell us about the scope of equilibrium mappings for active particles in external potentials.

[1]NSF DMR-1149266, NSF MRSEC DMR-1420382

Yaouen Fily
Brandeis Univ

Date submitted: 10 Nov 2016 Electronic form version 1.4