

Abstract Submitted
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Aligning self-propelling particles in confinement ENKELEIDA

LUSHI, New Jersey Inst of Tech, NATHANIEL NETZNIK, Pennsylvania State University, KATHERINE WALL, Brigham Young University , SHANG-HUAN CHIU, New Jersey Inst of Tech — We present a model for self-propelling aligning particles and look at the collective motion for such swimmers in non-trivial confined domains. We discuss the complex behavior in circular convex domains and racetracks for a variety of densities, confinement sizes and alignment distances. Phase diagrams for different geometries summarize the behavior and give insight into the dynamics. Lastly, we compare the results to experiments in active matter systems such as motile colloids, swimming bacteria or larva fish, and note the qualitative similarities and differences.

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