

Abstract Submitted  
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**Interactions Between Flocks and Obstacles** PEARSON MILLER,  
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of Mechanical Engineering & Materials Science, Yale University — The collective  
behavior of interacting active particles has generated considerable interest in recent  
years. Many models for such behavior have been proposed, ranging from simple  
systems of discrete particles with ad hoc interaction rules to continuum models with  
assumed interaction potentials to complex, bio-inspired models of collective animal  
motion. But in almost all cases, the resulting emergent behavior is studied in isolated  
systems far from boundaries. In contrast, we present results from a computational  
study of a simple discrete flocking model in the presence of obstacles. We consider  
both the behavior of the system in restricted domains bounded by solid walls and  
the scattering of developed flocks off of stationary targets, and discuss the  
relationship of our results to liquid and granular systems.

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