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Collective Dynamics of a Laboratory Insect Swarm NICHOLAS OUELLETTE, DOUGLAS KELLEY, NIDHI KHURANA, Dept. of Mech. Eng., Yale University — Self-organized collective animal behavior is ubiquitous throughout the entire biological size spectrum. But despite broad interest in the dynamics of animal aggregations, little empirical data exists, and modelers have been forced to make many assumptions. In an attempt to bridge this gap, we report results from a laboratory study of swarms of the non-biting midge *Chironomus riparius*. Using multicamera stereoimaging and particle tracking, we measure the three-dimensional trajectories and kinematics of each individual insect, and study their statistics and interactions.

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