Abstract Submitted for the DFD07 Meeting of The American Physical Society

**Comparing flight strategies in species of fruit flies** ITAI COHEN, LEIF RISTROPH, GORDON BERMAN, Department of Physics, Cornell University, Z. JANE WANG, Theoretical & Applied Mechanics, Cornell University — Observing different species of fruit flies offers an opportunity to compare flight strategies for insects of varying size but of nearly identical body and wing architecture. Using automated three-dimensional high-speed videography, we have captured many free-flight sequences of flies. We extract complete body and wing kinematics and determine the fluid forces acting on the wings using custom-written tracking and analysis software. We find that, in addition to lift, drag plays an important role in providing the vertical force needed for these insects to stay aloft. In this presentation, we will describe how this strategy of using drag varies among different species of Drosophila.

> Itai Cohen Department of Physics, Cornell University

Date submitted: 03 Aug 2007

Electronic form version 1.4