Abstract Submitted
for the DFD12 Meeting of
The American Physical Society

**Effects of wing flexibility on aerodynamic performance in hovering flight**[1] TAO YANG, MINGJUN WEI, New Mexico State University — In this study, we use a strong-coupling approach to simulate three dimensional flexible flapping wings in hovering flight. The approach is based on a uniform description of both fluid and solid in global Eulerian framework. There has been extensive validation of the current approach with other numerical simulation and experiments. Then we apply our approach to simulate flapping wings with different flexibility and other control parameters. The simulation results allow us to study directly the effects of wing flexibility on the aerodynamic performance of hovering flight.

[1]Supported by ARL

Mingjun Wei
New Mexico State University

Date submitted: 03 Aug 2012 Electronic form version 1.4