MMAE SEMINAR

Wednesday, March 28, 2007
E-1 BUILDING – CRAWFORD AUDITORIUM
3:30 – 4:30 PM

The Aeromechanics of Bat Flight

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Abstract

The agility and maneuverability of bats during flight is unparalleled in either the natural or the engineered world. These animals fly in a somewhat unique aerodynamic environment due ot their highly articulated and flexible skeleton, the thin membrane that forms their wing, the use of integrated hair sensors distributed over the upper and lower surfaces of the wing membrane, and lastly the low Reynolds number environment in which they fly. The talk will present results from a series of ongoing studies in our group, including experiments with live bats aimed at quantifying their flight capabilities, detailed measurements of the aerodynamic performance of flexible membrane wings at low Reynolds numbers, and numerical simulations based on measured wing motions.