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Flight of a Rufous Hummingbird Robotic Model-PIV Measurements¹ HUMBERTO BOCANEGRA EVANS, RAMIRO CHAVEZ ALARCON, PAULO FERREIRA DE SOUSA, New Mexico State University, BRET TOBALSKE, University of Portland, JAMES ALLEN, New Mexico State University — Phase-locked PIV velocity data was obtained around the wing and in the wake of a 2-DOF scaled robotic hummingbird model. Experiments were conducted in a large water channel facility at New Mexico State University. Reynolds and Strouhal numbers for the experiment are in the range of 3600 and 0.97, respectively. Momentum balance from velocity field measurements is used to estimate the lift and drag of the hummingbird model, and compared with force data directly obtained using strain gages.

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Prefer Oral Session
 Prefer Poster Session

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