

Abstract Submitted  
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**Flight of a Rufous Hummingbird Robotic Model-Force Measurements**<sup>1</sup> RAMIRO CHAVEZ ALARCON, HUMBERTO BOCANEGRA EVANS, PAULO FERREIRA DE SOUSA, New Mexico State University, BRET TOBALSKE, University of Portland, JAMES ALLEN, New Mexico State University — Aerodynamic force data was measured on a 2-DOF scaled robotic hummingbird model for both hovering and translational flight. 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. Forces are directly measured using strain gages and compared with phase-locked PIV results.

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