

Abstract Submitted
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Observations on Leading-Edge Vortex Development¹ MICHAEL GLENN, Alabama A&M University, AMY LANG, REDHA WAHIDI, JACOB WILROY, The University of Alabama — Most of an insect's lift comes from the leading edge vortex (LEV) that they produce when flapping their wings. There are many variables that make a LEV either stronger or weaker such as: roughness from the scales on their wings, angle of attack (AoA) of wing, size of the wing, and speed of the wing during flapping motion. Experiments were conducted to study LEV development to gain a better understanding of butterfly flight and the importance of LEV formation. The variables emphasized in this particular experiment were the chord length Reynolds numbers. Two smooth plates of 4 inches and 7 inches were compared in this experiment with Re of 1500 and 3000. Matlab was used to track the LEV location and calculate the vorticity and circulation magnitudes. Differences in LEV vortex strength as a function of chord length will be presented.

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