

Abstract Submitted  
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**Modification of Tip-Vortices using Chevron Wing Tips** ANUSHKA

GOYAL, JOVAN NEDIC, McGill University — The aerodynamic performance of chevrons with varying depths, cut directly into the tips of a flat plate with a semi aspect ratio of 3 were investigated using a time resolved six axis force/torque sensor at a Reynolds number of 67,000. Results show that shallower chevrons cut directly into the tips of wings lead to a higher peak  $\frac{L}{D}$  ratio at an angle of attack of  $5^\circ$ . It is known that the formation of a tip vortex depends on the geometry of the wing tip (Sarpkaya 1983, Giuni and Green 2013). The chevrons plates formed tip vortices that have lower peak tangential velocities and larger core radii as compared to a flat plate, based on measurements taken by using a four sensor hot wire. The tip vortices formed on wing tips with deeper chevrons exhibited a turbulent core, as opposed to those formed on a flat plate. It was also found that deeper chevron plates had an impact on the wandering of the tip vortex.

Anushka Goyal  
McGill University

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