

Abstract Submitted
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Performance Evaluation of Leading Edge Slats on Rigid Wing Sail Catamarans¹ CHELSEA JOHNSON, Union University, CHARLES O'NEILL, University of Alabama — Rigid wing sails have created the fastest catamarans in history, however with the addition of a leading edge slat higher lift and faster speeds may be achieved. Slats are currently used on airplane wings to increase lift, but have not been implemented on a rigid wing sail catamaran. Using 3D modeling and computational fluid dynamics software, this research investigates the effect that slats have on the performance of rigid wing sail catamarans. Aerodynamics and hydrodynamics form the basis of the research. The preliminary results show an increase in the coefficient of lift for sail models with slats over sail models without slats, allowing the catamaran to perform at higher speeds. The ability of the slat to rotate has also been identified as a key factor in increasing the benefit of the slat.

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