

Active Stall Control through Boundary Layer Control for Horizontal Axis Wind Turbines

The goal of this project is to investigate boundary layer control methods and to assess whether they can be implemented in a HAWTs and used to control the loads experienced by the blades. This would ultimately allow us to eliminate the pitch system and thus decrease the HAWTs cost.

The control techniques that will be looked into include boundary layer suction/blowing, Trailing edge jets and Plasma Actuators. By the end of this research a new blade design should be proposed, possibly with collaboration with the FLOW research topic on passive stall.