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**ACTIVE AERODYNAMIC LOAD CONTROL OF WIND TURBINE BLADES\***

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**ABSTRACT**

The cost of wind-generated electricity can be reduced by mitigating fatigue loads acting on the rotor blades of wind turbines. One way to accomplish this is with active aerodynamic load control devices that supplement the load control obtainable with current full-span pitch control. Thin airfoil theory suggests that such devices will be more effective if they are located near the blade trailing edge. While considerable effort in Europe is concentrating on the capability of conventional trailing edge flaps to control these loads, our effort is concentrating on very small devices, called microtabs, that produce similar effects. This paper discusses the work we have done on microtabs, including a recent simulation that illustrates the large impact these small devices can exert on a blade. Although microtabs show promise for this application, significant challenges must be overcome before they can be demonstrated to be a viable, cost-effective technology.

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