

Interactive comment on “Pressure Based Lift Estimation and its Application to Feedforward Load Control employing Trailing Edge Flaps” by Sirko Bartholomay et al.

Anonymous Referee #1

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The paper describes the implementation of a trailing edge flap controller for a quasi two-dimensional airfoil interacting with two-dimensional inflow disturbance created by an active grids of airfoil profiles. Significant room is dedicated to validation of lift estimation strategies by using a three-hole probe before the airfoil and by using three pressure ports on the surface of the airfoil. By comparing with a PID controller, it is shown that the proposed lift estimation strategies perform better at lower reduced frequencies and are suitable to alleviate damage equivalent loads by active trailing edge flap control.

In general, this is a very well written paper that reports on interesting ideas and a large

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body of work. There is little to critique.

For wind turbine applications, it would be useful if the authors could elaborate a bit further which regime, i.e., which exact reduced frequencies, etc. would be expected for turbines of typical industrial rotor diameter and also the Berlin research scale turbine (BeRT) that seems to be the primary target for this load controller.

Some minor typos and questions: p.2, 29: ...arises which sensor input. . . p.4, 18: . . . by a two-dimensional active grid . . . p.6, 31: The underlying methodology . . . p.6, 33: The reference static pressure was obtained from . . . p.8, 5: . . . Fourier transformed . . . , 7: . . .Fourier transform p.16, 9: . . .which is chosen as... p.16, 10 . . . equation 11... , 13: Eq. 12 . . . Make sure equations are referenced consistently. p.17, 9: What exactly are A and b? Not referred to in any given equations.

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