*Reviewer #5: My largest concern is that the response of the prototype (shown page 8) and case #202 (page 25) to a 3deg change in AoA for 4 seconds appears to be divergent if held longer than 4 sec. This might be due to changes in flight condition of an increase in climb angle. Would this occur on a linearization of the system? Include an analysis of what is happening and why we should not be concerned.*

**RE:** The solution is not divergent; the deviation with respect to the desired constant response is due to the phugoid mode, which is stable and underdamped, and appears as unmatched dynamics in the short-period dynamics. The L1 controller is able to partially compensate for this mode, but not able to completely cancel it. The same behavior would occur in a linearized model of the aircraft that considered the states airspeed, AoA, pitch rate, and pitch angle. It would not appear in a simplified linear model of the short-period dynamics (AoA and pitch rate).

This is a standard behavior, which also occurs when using conventional flight control systems based on PID control. This slow oscillation can be easily compensated by the pilot or an outer-loop autopilot, so it is of no concern.

We are attaching a Simulink model of a linearized model illustrating this behavior.

E. Xargay, N. Hovakimyan, V. Dobrokhodov, I. Kaminer, C. Cao, and I. M. Gregory, “L1 Adaptive Control in Flight,” in the book of “Intelligent Systems, Progress in Aeronautics and Astronautics Series,” American Institute of Aeronautics and Astronautics. To appear in 2012.