1107-35-109 **Justin T Webster*** (jtwebste@ncsu.edu), SAS Hall, Department of Mathematics, North Carolina State University, Raleigh, NC 27695, and **Irena Lasiecka** (lasiecka@memphis.edu), Memphis, TN 38152. *Panel flutter: Asymptotic-in-time regularity or uniform-in-time Hadamard continuity.*

Panel flutter is a well-known aeroelastic instability prevalent in the engineering literature. The canonical model couples a thin plate to a perturbed wave equation (potential flow) in the over-body half space. Well-posedness and global attraction properties for this model (in the absence of dissipation mechanisms) have been established recently. The results use of state-of-the art techniques for von Karman equations, PDEs with delay, and dissipative dynamical systems. Here we present stabilization results for the full flow-plate dynamics in the presence of control-theoretic damping. These address the problem of panel flutter from the PDE model, and corroborate physical observations that panel flutter does not occur in subsonic flows. We show that finite-energy subsonic flow-plate trajectories converge asymptotically to the set of stationary states (in the presence of viscous damping scaled according to plate loading). We show a decoupling of the plate dynamics into an asymptotically regular component and a component exhibiting uniform exponential decay. From this we infer a dichotomy: for a given flow-plate trajectory, the plate velocity decays exponentially (yielding Hadamard continuity on the infinite-time horizon) OR the trajectory is eventually smooth. (Received January 07, 2015)