1068-93-39 **Aleksandra Gruszka*** (olka@math.lsu.edu), Department of Mathematics, 303 Lockett Hall, Louisiana State University, Baton Rouge, LA 70803-4918. *Tracking Control and Robustness for Planar Vertical Takeoff and Landing Aircraft under Bounded Feedbacks.*

We study feedback tracking for the planar vertical takeoff and landing aircraft dynamics, which is a benchmark model in aerospace engineering. We construct new feedback stabilizers for the tracking dynamics. The novelty of our contribution is in the boundedness of our feedback controllers and their applicability to cases where the velocity measurements may not be available, coupled with the uniform global asymptotic stability and uniform local exponential stability of the closed loop tracking dynamics, and the input-to-state stable performance of the closed loop tracking dynamics with respect to actuator errors. Our proofs are based on a new bounded backstepping result. This work is joint with Michael Malisoff and Frederic Mazenc. (Received January 03, 2011)