Abstract

The $H_\infty$ control theory is effective for the performance and stability analyses of a system with uncertain controlled elements. The synthesis of the controller for such uncertain systems is called the $H_\infty$ control problem. We applied a solution method for the $H_\infty$ control problem to the identification of the human pilot as an aircraft controller. Experiments using a flight simulator were also carried out and compared to the derived $H_\infty$ controller. We found that the application of the solution method for the $H_\infty$ control problem has a large possibility of becoming an effective tool for the identification of a human pilot and analysis of the closed-loop system's performance and stability.

Keywords: Human Factor, Roll Control, $H_\infty$ Control Problem

* 1 Graduate Student, Course of Aeronautics and Astronautics
* 2 Professor, Department of Aeronautics and Astronautics