

Application of H_{∞} Control Problem to the Identification of Pilot's Control Law in Aircraft Attitude Control

by

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Abstract

The H_{∞} 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_{∞} control problem. We applied a solution method for the H_{∞} 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_{∞} controller. We found that the application of the solution method for the H_{∞} 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_{∞} Control Problem

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