MULTI-OBJECTIVE CONTROLLER SYNTHESIS FOR MIMO SYSTEM

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THESIS

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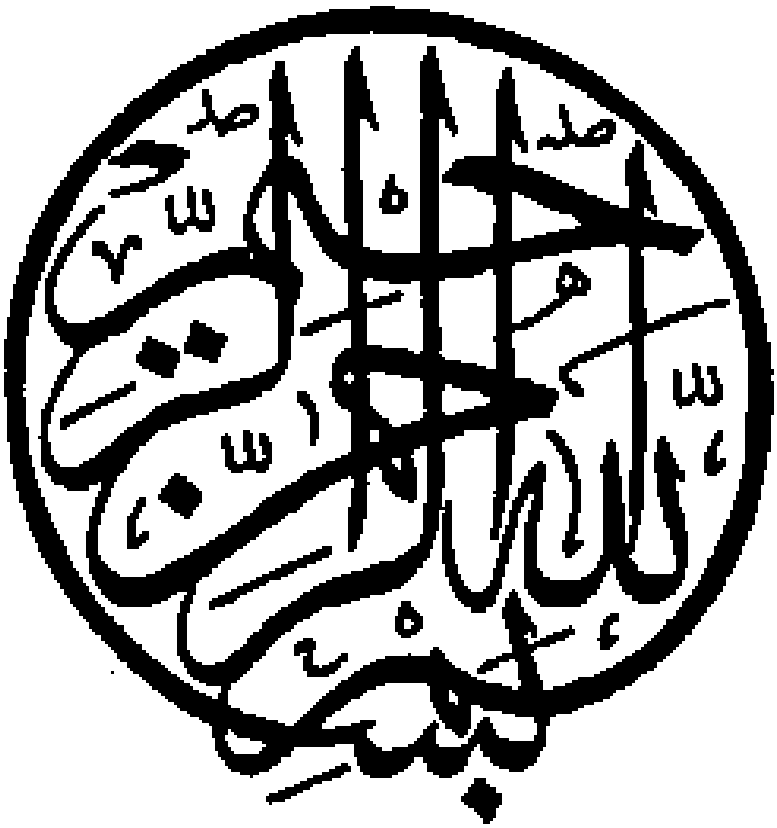

ABSTRACT

The aim of this work is to study and understanding of multi-objective optimization problem. In this work the optimization problem include H_2 and H_∞ of some closed loop transfer function with Pole constraints. Multi-objective H_2/H_∞ state feedback control with Pole constraints is an approach for synthesizing multi-objective controller for MIMO system. In this technique design task such as disturbance rejection, robust stabilization of systems with uncertainty can be expressed by H_∞/H_2 performance and by placing the closed loop poles in some region of left-Half plane one can achieve the desired transient response. This thesis covers synthesizing multi-objective controller for pitch attitude hold autopilot of an aircraft. MATLAB software is used for simulation and verification of performance.

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