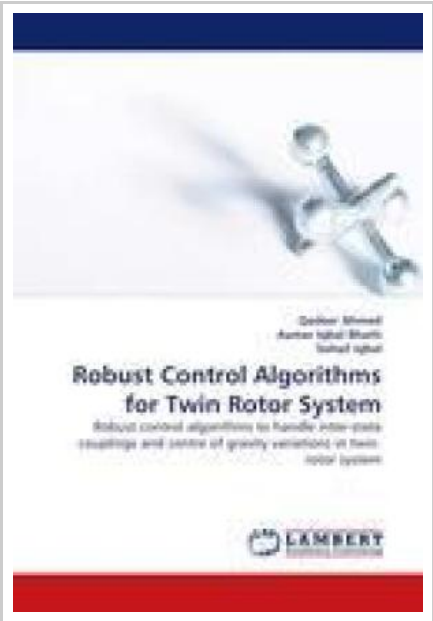

Robust Control Algorithms for Twin Rotor System

By Qadeer Ahmed

LAP Lambert Acad. Publ. Mai 2011, 2011. Taschenbuch. Book Condition: Neu. 220x150x8 mm. This item is printed on demand - Print on Demand Neuware - This manuscript deals with robust control algorithms from linear and nonlinear domain for Twin Rotor System (TRS). This system is prone to highly disturbing interstate cross- couplings and perturbations in centre of gravity (CG) that affect its smooth manoeuvring and performance. These problems are resolved by employing H controller from linear robust control theory. H controller is synthesized by using traditional and Hadamard weights through loop shaping procedure. However, the designed linear controllers are effective in linear range only and robustness is achieved at the cost of performance or vice versa. In second attempt, the afore-mentioned TRS problems are resolved by exploiting sliding mode controllers from nonlinear theory. These nonlinear controllers deliver credible solution against inter-state couplings and CG variations. The proposed controllers are validated by implementing on helicopter model, after successful numerical simulations. 132 pp. Englisch.

Reviews

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