TERMINAL SLIDING MODE CONTROL BASED ATTITUDE CONTROL OF 2-DOF TWIN ROTOR SYSTEM

ADNAN SHARIF
REG # 51168

BAHRIA UNIVERSITY ISLAMABAD
KARACHI CAMPUS

Approval for Examination

Scholar's Name: Mr. Adnan Sharif Registration No. 51168

Programme of Study: MS(EE)

Thesis Title: Terminal Sliding Mode Control based Attitude Control of 2-DOF Twin Rotor System

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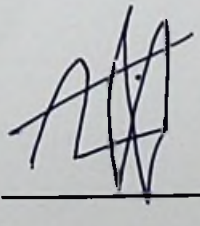

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ABSTRACT

A Twin rotor system (TRS) is a highly nonlinear and unstable multi-input multi-output system. Control of a such system is a challenging problem which has attracted a lot of research effort. In this thesis an Integral Terminal Sliding Mode Control (ITSMC) based design for attitude control of TRS is proposed that assures disturbance rejection with asymptotic stability. The proposed ITSMC uses second order Integral Terminal Sliding surface which guarantees trajectory tracking. Lyapunov based stability analysis and MATLAB based simulation is used to support the validity of proposed controller. Further hardware implementation is made to verify the effectiveness of the proposed controller.

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