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CERTIFICATE OF ATTENDANCE

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SLIDING MODE CONTROL FOR HELICOPTER LIKE SUBJECT TO EXTERNAL
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Author(s) of the paper

SAMIR ZEGHLACHE



Omer Faruk Bay

Prof. Dr. Omer Faruk Bay
Chair

Nointeracting Adaptive Type 2 Fuzzy Second Order Sliding Mode Control for Helicopter Like
Subject to External Perturbations

Samir Zeglache

*LASS, Laboratoire d'Analyse des Signaux et Systèmes, Department of Electrical
Engineering, Faculty of Technology, Mohamed Boudiaf University of Msila, BP 166 Ichbilila, Msila,
Algeria*

E-mail: samir.zeglache@univ-msila.dz

Abstract: In this paper, an Adaptive Type-2 Fuzzy Second-order Sliding mode Control (AT2FSOSMC) is developed for Twin Rotor MIMO System (TRMS) in robust path following versus wind effects. Firstly, the dynamical modelling of the TRMS is carried out. Secondly, a hybrid type-2 fuzzy adaptive control is applied to the TRMS, Thirdly, asymptotic stability is proved by utilizing Lyapunov approach. The proposed control is introduced to the TRMS with 2 degree of freedom (DOF) configuration, where the decoupling step is not requiring. Practical results show good trajectory following capability of the developed controller in attendance of external perturbations and wind effects.

Keywords: TRMS, Type-2 inference system, Robust control, Adaptive control, Lyapunov stability, External perturbations

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