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Low-cost Fuzzy Control Solutions for Electromechanical Applications

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Abstract: The electromechanical systems are widely used in many control applications as either actuators integrated to the controlled processes or as controlled processes themselves. Low-cost control algorithms are very attractive because of the relatively simple mathematical models, control design and tuning and implementation as well. Low-cost fuzzy controllers can ensure good control system performance and they also can compensate for the nonlinearities in the structure of the electromechanical systems. This paper is dedicated to the presentation of some design methods dedicated to low-cost control structures with Takagi-Sugeno fuzzy controllers with emphasis on electromechanical applications. Comparisons supported by simulation and experimental results are included in order to validate the solutions.

Keywords: electromechanical actuators, electromechanical applications, Magnetic Levitation System with 2 Electromagnets, Takagi-Sugeno fuzzy control.

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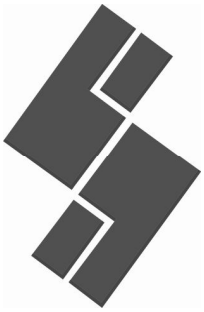

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