



ACCURACY COMPARISON OF ARX AND ANFIS MODEL OF AN ELECTRO-HYDRAULIC ACTUATOR SYSTEM

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Abstract – Precise control of electro-hydraulic actuator (EHA) system has been an interesting subject due to its nonlinearities and uncertainties characteristics. Good control can be designed when precise model of the system is available. Linear ARX modelling has widely been applied and satisfying result has been obtained, through linearization process. The objective of this paper is to compare ARX model with nonlinear ANFIS (Adaptive Neuro-Fuzzy Inference System) model, which can represent the real EHA system more precisely using same linearized data. Results show that ANFIS model is more accurate in approximation estimation of EHA system than ARX model on linearized data.

Index terms: ARX, ANFIS, electro-hydraulic, linearization, nonlinear.