



## TRAJECTORY ADAPTIVE ZPET CONTROLLER WITHOUT FACTORIZATION OF ZEROS FOR NON-MINIMUM PHASE SYSTEM IN APPLICATION TO REAL-TIME DIGITAL TRACKING CONTROL OF ELECTRO-HYDRAULIC ACTUATOR

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*Submitted: Sep. 22, 2013*

*Accepted: Jan. 10, 2013*

*Published: Feb. 20, 2013*

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*Abstract— Electro-hydraulic actuators are very important tools for industrial processes because they provide linear movement, fast response and accurate positioning of heavy load. Recently, with the research and development of mathematics, control theory and basic theory of hydraulic, hydraulic control technology has been developed and has been widely used in many applications such as industrial automation and machining processes. Due to its applications, the highest performance of the electro-hydraulic actuators on position, motion or tracking is needed. Therefore, a suitable controller is required to improve the performance of the electro-hydraulic actuator. Most researchers have used advanced control approach to improve the motion or tracking control. Based on these problems, we had done a real-time digital tracking control studies on electro-hydraulic actuator using trajectory adaptive zero phase error tracking control (ZPETC) without factorization*

*of zero polynomial algorithm. The control strategy uses a recursive least square parameters estimation that was done offline prior the actual control operation by taking advantage of the available known reference input. The experimental results obtained show significant tracking performance.*

**Keywords—** Adaptive Control, feedforward control, tracking control, zero phase error tracking control