

عنوان مقاله:

Experimental Analysis of Square Position on Variable Displacement Electrohydraulic Actuation System by Open Loop Control

محل انتشار:

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خلاصه مقاله:

Electrohydraulic actuation systems offer definitive position control and an energy-efficient solution. Such systems are widely used in mobile machinery, robotics, and various stationary systems. Achieving good control of actuator position of the variable displacement electrohydraulic actuation system by an open loop control is the objective of this study. For square position (reference position) control, amplitude is taken as 0.1 m, at 0.05, 0.15 and 0.25 Hertz of frequency. Square position control is accomplished with LabVIEW algorithm through the application of compact RIO controller having input and output module. Appropriate control of voltage supply is obtained, when response position and reference position show appropriate accuracy. A higher Pearson's correlation coefficient near to 1 and lower the Mean absolute error, Mean deviation of error and standard deviation of error represent the best response position. It is observed that highest value of correlation coefficient achieved at 0.05 Hertz of frequency for response R³. At a lower frequency, square position control is better with higher correlation coefficient and lowest values of errors.

کلمات کلیدی:

Actuator position control, Square reference position, Open-loop Control, Correlation coefficient

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