Abstract
High accuracy trajectory tracking is challenging topic in robotic manipulator control. This is due to nonlinearities and input coupling present in robotic arm. This paper is concerned with the problem of modelling and control of two degree of freedom robotic manipulator. PID controller and sliding mode controller is derived so that actual trajectory tracks desired trajectory as close as possible despite of highly nonlinear and coupled dynamics. The goal is to determine which control strategy exhibit more robustness. Simulation study has been done in Matlab/Simulink.
environment shows that both the controllers are capable to control robot manipulator successfully. The result shows that Sliding Mode Control (SMC) produce better response compared to PID Control strategy when payload is changed.

Reference


Index Terms

Computer Science
Communications

Key words

Robotic manipulator
PID
Controller
Manipulator control
Sliding mode control