Abstract

Nonlinear control techniques are applied on mechanical systems namely two link robot manipulator to study the effect of the controllers on the tracking performance of the two system. A design of sliding mode control (SMC) for the position tracking of two link robot manipulator based on the sliding mode control technique and the Lyapunov stability theory is carried out to eliminate the perturbation and asymptotical stability can be achieved when the system is subjected to the sliding mode. A sliding mode control method based on RBF (radial basis function) neural network is addressed which has the capability of learning uncertain control actions shown by the several industrial robots. In RBFNN-SMC method the algorithm for tuning the parameters are extracted from the RBF function. The comparative study is done based on the evaluated parameters for the system

References

1. K.M.Koo, J.H.Kim: Robust Control of Robot Manipulators with Parameters Uncertainty,
Sliding Mode Control with RBF Neural Network for Two Link Robot Manipulator


Index Terms

Computer Science

Artificial Intelligence

Keywords

Sliding mode control, RBF Neural Network, Two-link robot manipulator.