

CARTESIAN SLIDING PD CONTROL OF ROBOT MANIPULATORS FOR TRACKING IN FINITE TIME: THEORY AND EXPERIMENTS

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Abstract: For a class of robot arms, the PD controller plus and PID controller can not render asymptotic stability for tracking tasks. In this work a cartesian control system is proposed which guarantees robust tracking in finite time based on time base generator for uncertain robot arms, to reach this goal we proposed a nonlinear control based on second order sliding modes and we present the design and experimental results in a robot without gravity component and small friction parameters

Key words: Robot manipulator, adaptive control, sliding mode control, finite time convergence, time base generator



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This Publication has to be referred as: Dominguez Ramirez, O[mar] A[rturo]; Parra Vega, V[icente]; Diaz Montiel, M[ayen] G[icela]; Pozas Cardenas, M[ariano] J[avier] & Hernandez Gomez, R[oberto] A[rmando] (2008). Cartesian Sliding PD Control of Robot Manipulators for Tracking in Finite Time: Theory and Experiments, Chapter 23 in DAAAM International Scientific Book 2008, pp. 257-272, B. Katalinic (Ed.), Published by DAAAM International, ISBN 978-3-901509-66-7, ISSN 1726-9687, Vienna, Austria
DOI: 10.2507/daaam.scibook.2008.23