

Relaxing Convergence Constraints in Local Priority Hysteresis Switching Logic

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Abstract : This paper addresses certain inherent limitations of local priority hysteresis switching logic. Our main result establishes that under persistent excitation assumption, it is possible to relax constraints requiring strict positivity of local priority and hysteresis switching constants. Relaxing these constraints allows the adaptive system to reach optimality which implies the performance improvement. The unconstrained local priority hysteresis switching logic is examined and conditions for global convergence are derived.

Keywords : adaptive control, convergence, hysteresis constant, hysteresis switching

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