On the Absolute Stabilization of Dynamical-Delay Systems

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Abstract: In this paper we deal with the problem of absolute stabilization for Lur'e systems with time-varying delay in a range. An appropriate Lyapunov-Krasovskii functional is proposed to investigate the delay-range-dependant stabilization problem.The time-varying delay is assumed to belong to an interval and no restriction on its derivative is needed. Some relaxation matrices are introduced, which allow the delay to be a fast time-varying function. Furthermore, a numerical example is given to prove effectiveness of our main result.