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H∞ Sampled-Data Control for Linear Systems Time-Varying Delays: Application to Power System

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Abstract : This paper investigates improved stability criteria for sampled-data control of linear systems with disturbances and time-varying delays. Based on Lyapunov-Krasovskii stability theory, delay-dependent conditions sufficient to ensure H∞ stability for the system are derived in the form of linear matrix inequalities(LMI). The effectiveness of the proposed method will be shown in numerical examples.

Keywords : sampled-data control system, Lyapunov-Krasovskii functional, time delay-dependent, LMI, H∞ control
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