



Dual Lyapunov Theory and Its Applications

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While global Lyapunov theorem can be used to determine a common limit set for all solutions of a differential equation, dual Lyapunov theorem can characterize the common limit set for almost all solutions. In this talk, we will summarize the dual Lyapunov theory and introduce a generalization of this theory to switched nonlinear systems. We will also discuss as to how dual Lyapunov theory can be adapted to characterize the asymptotic behavior of discrete-time Markov processes. As an example, we will consider an application of dual Lyapunov approach to Markov processes obtained by indirectly measuring a quantum system.

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