论文

SOME PROBLEMS OF LYAPUNOV METHOD IN LINEAR CONTINUOUS-TIME SYSTEM

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摘要   In this paper, some problems of Lyapunov method in linear continuous-time system are discussed. In part 1, some motivations are given. In part 2, in order to get a good estimate ofthe decaying time in the system, the concept of appropriate Lyapunov function is introduced andthe condition of the system is given to guarantee the existence of the appropriate Lyapunov function An application of the appropriate Lyapunov function is introduced to give the bound of time varying perturbation for the stable system. In part 3, some extensions of the Lyapunov asymptotical stabilitytheorem are given, where the condition of the total derivative of the Lyapunov function along thetrajectory of the system can be reduced from negative definiteness to semi-negative definiteness andcommon quadratic forms with some reasonable conditions, the example shows the extensions are interesting.

关键词   Appropriate Lyapunov function,Uniformly

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