

Stability of N-Dimensional Linear Systems with Multiple Delays and Application to Synchronization

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摘要 This paper further investigates the stability of the n-dimensional linear systems with multiple delays. Using Laplace transform, we introduce a definition of characteristic equation for the n-dimensional linear systems with multiple delays. Moreover, one sufficient condition is attained for the Lyapunov globally asymptotical stability of the general multi-delay linear systems. In particular, our result shows that some uncommensurate linear delays systems have the similar stability criterion as that of the commensurate linear delays systems. This result also generalizes that of Chen and Moore (2002). Finally, this theorem is applied to chaos synchronization of the multi-delay coupled Chua's systems.

关键词 [Chaos synchronization, multi-delay linear systems, stability](#)

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Key words [Chaos synchronization](#) [multi-delay linear systems](#) [stability](#)

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