论文

THE GEOMETRIC PROPERTIES OF THE SET OF LYAPUNOV MATRICES AND THE STABILITY OF THE MATRIX FAMILY

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摘要　　Given a stable matrix A∈C~(n×n), there are some simple simultaneous inequalities whose coefficients rely on A. For \forall P~H=P∈C~(n×n), if P satisfies these inequlities, then PA+A~HP<0. As anapplication of the main results, the stability of the matrix family is treated. Besides, some geometric properties of the set of all the Lyapunov matrices of a given stable matrix are considered.

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Key words　　Stability　　Matrix family　　Lyapunov equation　　Lyapunov matrices　　Convex property

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