

**ON ONE APPLICATION OF CONVEX OPTIMIZATION TO STABILITY  
OF LINEAR SYSTEMS**

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One of the most important problem of control theory is control of switched systems. This problem is related to the common quadratic Lyapunov function problem and one of the way to solve it is LMI (Linear Matrix Inequalities) approach. On the other hand this approach requires a huge number of parameters and is not effective when the number of subsystems and matrix dimensions increase. In this paper we give alternative methods for testing stability of switched systems. These methods are based on the convexity property of the maximum eigenvalue function of symmetric matrices.

Keywords: Lyapunov inequalities, switched systems, maximum eigenvalue.

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