Fritz John's convexity theorem and the classification of the existence and nonexistence of Lyapunov quadratic functions

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We consider the following two questions about switched linear systems:

1. *Does there exist a quantity to control the dynamics of a switched linear system?*

2. *Does there exist a quantity to classify the cases of the existence or nonexistence or undecidability of a common quadratic Lyapunov function for a switched linear system?*

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