A Gel'fand-type spectral radius formula and stability of linear constrained switching systems

Xiongping Dai

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Using ergodic theory, in this paper we present a Gel'fand-type spectral radius formula which states that the joint spectral radius is equal to the generalized spectral radius for a matrix multiplicative semigroup $\bS^+$ restricted to a subset that need not carry the algebraic structure of $\bS^+$. This generalizes the Berger-Wang formula. Using it as a tool, we study the absolute exponential stability of a linear switched system driven by a compact subshift of the one-sided Markov shift associated to $\bS$.

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