PASSIVE CONTROL SYNTHESIS FOR UNCERTAIN MARKOVIAN JUMP SYSTEMS WITH MULTIPLE MODE-DEPENDENT TIME-DELAYS

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ABSTRACT

In this note, the robust passivity synthesis problem for a class of uncertain Markovian jump systems with multiple mode-dependent time-delays is addressed. Delay-dependent sufficient conditions for passivity are obtained in terms of linear matrix inequalities by using a descriptor model transformation of the system and by applying a recent result on the bounding of the inner product of two vectors. A robust memoryless state-feedback controller is derived. One example is given which illustrates the effectiveness of the new theory.

KeyWords: Markovian jump linear system, passive control, linear matrix inequality (LMI), time-delay, delay-dependent criteria.