论文

FEEDBACK CONTROL OF A CLASS OF FLEXIBLE SYSTEMS WITH COUPLED BENDING AND TORSIONAL VIBRATIONS

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摘要   In this paper, a class of flexible systems of beams with coupled bending andtorsional vibrations, which has important applications in the dynamics of aircraft is discussed. The existence and uniqueness of the solution for this class of systems are proved, where the spectral analysis method and the unconditional base theory are used, and asufficient condition for the asymptotic stability of the closed-loop system is obtained by means of the (D) class operators theory.

关键词   Flexible system,feedback control,C_0-sem
分类号

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Abstract In this paper, a class of flexible systems of beams with coupled bending andtorsional vibrations, which has important applications in the dynamics of aircraft is discussed. The existence and uniqueness of the solution for this class of systems are proved, where the spectral analysis method and the unconditional base theory are used, and asufficient condition for the asymptotic stability of the closed-loop system is obtained by means of the (D) class operators theory.

Key words   Flexible system   feedback control   C_0-semigroup   unconditional base   asymptotic stability

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