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Spatial Control; 5.1 Introduction

5.2 Spatial Hoo control problem; 5.3 Spatial Hoo control of a piezoelectric laminate beam; 5.4 Experimental implementation of the spatial Hoo controller; 5.5 The effect of pre-filtering on performance of the spatial Hoo controller; 5.6 The spatial H2 control problem; 5.7 Spatial H2 control of a piezoelectric laminate beam; 5.8 Experimental implementation of spatial H2 control; 5.9 Conclusions; 6. Optimal Placement of Actuators and Sensors; 6.1 Introduction; 6.2 Dynamics of a piezoelectric laminate plate; 6.3 Optimal placement of actuators; 6.4 Optimal placement of sensors; 6.5 Optimal placement of piezoelectric actuators and sensors; 6.6 Numerical and experimental results; 6.7 Conclusions; 7. System Identification for Spatially Distributed Systems; 7.1 Introduction; 7.2 Modeling; 7.3 Spatial sampling; 7.4 Identifying the system matrix; 7.5 Identifying the mode shapes and feed-through function; 7.6 Experimental results; 7.7 Conclusions; Appendix A Frequency domain subspace system identification; A.1 Introduction; A.2 Frequency Domain Subspace Algorithm; Bibliography; Index

Sommario/riassunto

Vibration is a natural phenomenon that occurs in a variety of engineering systems. In many circumstances, vibration greatly affects the nature of engineering design as it often dictates limiting factors in the performance of the system. The conventional treatment is to redesign the system or to use passive damping. The former could be a costly exercise, while the latter is only effective at higher frequencies. Active control techniques have emerged as viable technologies to fill this low-frequency gap. This book is concerned with the study of feedback controllers for vibration control of flexi

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