<<非连续非线性系统的控制理论与应用>>

图书基本信息

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作者：申铁龙 等编

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内容概要

Discontinuity in dynamic systems is a tough property for analysis and control of the system. However, in practical engineering, we are often faced withthe discontinuity in control system design. In dynamical systems, the discon-tinuity is usually caused by natural phenomenon snch as static friction, strokechanges etc., in mechanical systems or control actions engineered by controllerdesign such as variable structure control, switching control, etc. For this kindof systems, the conventional framework for analysis and synthesis is not suffi-cient to provide a solution in exact theoretical sense. The field of control theoryfor dynamical systems with discontinuity is widely open for future research anddevelopment. The aim of the second China-Japan joint workshop on control theory andtechnology is to provide a forum for scientists on automatic control from bothChina and Japan to exchange contemporary research results Oil this issue andto promote the applications of advanced control theory to practical engineeringproblems, and as a result to enhance the development and spread new resultsof control theory on the dynamical systems with discontinuities. The papersincluded in this book are selected from the workshop, and this selection is focusedon the papers dealing with the closely related topics of nonsrnooth, switchingand hybrid systems and its applications in self driven hybrid systems such as thepowersystems,aircraft, land vehicles, mechanical and electrical systems. This book is organized as three parts: the first part contains 7 papers thataddressed theoretical problems in design of nonlinear control systems with dis-continuity and time-delay. The second part contains 6 papers with physical ap-plication of mechanical and electrical system, and the last part collects 4 papersthat focus on the control problem in vehicular systems including railway, automotive engine, etc.

书籍目录

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