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Nota di contenuto	Introduction -- Mathematical Preliminaries -- Vibration Control for Flexible Beam Based on LMI -- Vibration Control for Flexible String Based on LMI -- Basic Vibration Control for Three-Dimensional Flexible String with Variable Length -- Vibration Control for Three-Dimensional Flexible String with Variable Length and Input Constraint -- Vibration Control of Three-Dimensional Length-Varying Flexible String with Input Quantization -- Basic Vibration Control for Moving Vehicle-Mounted Flexible Manipulator -- Switching Fault-Tolerant Control of Moving Vehicle-Mounted Flexible Manipulator with State Constraint -- Vibration Control of Constrained Moving Vehicle-Mounted Flexible Manipulator with Guaranteed Performance -- Adaptive Iterative Learning Control of Moving Vehicle-Mounted Flexible Manipulator -- Conclusions.
Sommario/riassunto	This book aims at investigating PDE modeling and vibration control of some typical mechanical distributed parameter systems. Several control methods are proposed to realize stabilization of the closed-loop system with the help of mathematical tools and stability analysis methods. Besides, some common engineering problems, such as input and output constraints, are also involved in the control design. This

book offers a comprehensive introduction of mechanical distributed parameter systems, including PDE modeling, controller design and stability analysis. The related fundamental mathematical tools and analytical approaches involving in the PDE modeling and controller are also provided, which broadens its reach to readers.