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Titolo	Automatic Control with Experiments / / by Victor Manuel Hernández-Guzmán, Ramón Silva-Ortigoza, Jorge Alberto Orrante-Sakanassi
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Altri autori (Persone)	Silva-OrtigozaRamón Orrante-SakanassiJorge Alberto
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Soggetti	Automatic control System theory Control theory Electric power production Industrial engineering Production engineering Control and Systems Theory Systems Theory, Control Electrical Power Engineering Industrial and Production Engineering
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Nota di contenuto	Introduction -- Linear ordinary differential equations -- Basic tools for arbitrary order systems -- Time response-based design -- Frequency response-based design -- The state variables approach -- Advanced topics in control -- Discrete-time systems -- Control of PM brushed DC-motor -- Control of a ball and beam system -- Control of a magnetic levitation system -- Control of Pendubot -- Tilt angle estimation -- Control of wheeled pendulum -- Control of mechanical systems with flexibility -- Control of DC/DC power electronic converters.
Sommario/riassunto	This book offers an enhanced and comprehensive understanding of

control theory and its practical applications. The theoretical chapters on control tools have been meticulously revised and improved to provide a clearer and more insightful exploration of the fundamental concepts and ideas. The explanations have been refined, and new examples have been added to aid comprehension. Additionally, a new chapter on discrete-time systems has been included, delving into an important aspect of control theory. Advanced topics in control are also covered in greater detail, ensuring a comprehensive treatment of the subject matter. The section on experimental applications has been revamped to showcase the application of control ideas in various scenarios. Several chapters have been replaced with fresh content that focuses on controlling new and different experimental prototypes. These examples illustrate how control concepts can be effectively applied in real-world situations. Furthermore, this book introduces a new approach for control of non-minimum phase systems and explores the concept of differential flatness for multiple-input multiple-output systems. Additionally, a fascinating application involving a wheeled pendulum mobile robot has been included. While some chapters have been replaced, the second edition retains the chapters on the control of DC motors and the control of a magnetic levitation system. However, the material in the former chapter is mostly new, and the latter chapter is entirely supported by new control concepts and ideas.