1. Record Nr. UNINA9910781069103321

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Titolo	Distributed control of robotic networks [[electronic resource]] : a mathematical approach to motion coordination algorithms / / Francesco Bullo, Jorge Cortes, Sonia Martinez
Pubbl/distr/stampa	Princeton, NJ, : Princeton University Press, 2009
ISBN	1-68015-897-X 1-282-45820-5 1-282-93575-5 9786612458200 9786612935756 1-4008-3147-4 0-691-14195-9
Edizione	[Course Book]
Descrizione fisica	1 online resource (333 p.)
Collana	Princeton series in applied mathematics
Classificazione	SK 880
Altri autori (Persone)	CortesJorge <1974-> MartinezSonia <1974->
Disciplina	629.8/9246
Soggetti	Robotics Computer algorithms Robots - Control systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Frontmatter -- Contents -- Preface -- Chapter One. An introduction to distributed algorithms -- Chapter Two. Geometric models and optimization -- Chapter Three. Robotic network models and complexity notions -- Chapter Four. Connectivity maintenance and rendezvous -- Chapter Five. Deployment -- Chapter Six. Boundary estimation and tracking -- Bibliography -- Algorithm Index -- Subject Index -- Symbol Index
Sommario/riassunto	This self-contained introduction to the distributed control of robotic networks offers a distinctive blend of computer science and control theory. The book presents a broad set of tools for understanding coordination algorithms, determining their correctness, and assessing their complexity; and it analyzes various cooperative strategies for

tasks such as consensus, rendezvous, connectivity maintenance, deployment, and boundary estimation. The unifying theme is a formal model for robotic networks that explicitly incorporates their communication, sensing, control, and processing capabilities--a model that in turn leads to a common formal language to describe and analyze coordination algorithms. Written for first- and second-year graduate students in control and robotics, the book will also be useful to researchers in control theory, robotics, distributed algorithms, and automata theory. The book provides explanations of the basic concepts and main results, as well as numerous examples and exercises. Self-contained exposition of graph-theoretic concepts, distributed algorithms, and complexity measures for processor networks with fixed interconnection topology and for robotic networks with position-dependent interconnection topology Detailed treatment of averaging and consensus algorithms interpreted as linear iterations on synchronous networks Introduction of geometric notions such as partitions, proximity graphs, and multicenter functions Detailed treatment of motion coordination algorithms for deployment, rendezvous, connectivity maintenance, and boundary estimation