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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Nomenclature -- Acknowledgments -- Dedication -- Supervisor's Foreword -- Introduction -- Preliminaries -- Notation -- Network Topology -- Consensus Dynamics -- Advection on Graphs -- Beyond Linear Protocols -- Measures and Rewiring -- Distributed Online Topology Design for Disturbance Rejection -- Network Topology Design for UAV Swarming with Wind Gusts -- Cartesian Products of Z-Matrix Networks: Factorization and Interval Analysis -- On the Controllability and Observability of Cartesian Product Networks -- Strong Structural Controllability of Networked Dynamics -- Security and Infiltration of Networks: A Structural Controllability and Observability Perspective -- Conclusion and Future Work -- Appendix -- Single Anchor State Measures.
Sommario/riassunto	This thesis analyzes and explores the design of controlled networked dynamic systems - dubbed semi-autonomous networks. The work approaches the problem of effective control of semi-autonomous networks from three fronts: protocols which are run on individual agents in the network; the network interconnection topology design; and efficient modeling of these often large-scale networks. The author

extended the popular consensus protocol to advection and nonlinear consensus. The network redesign algorithms are supported by a game-theoretic and an online learning regret analysis.