1. Record Nr. UNISA996418181503316

Autore	Tasaki Hal
Titolo	Physics and Mathematics of Quantum Many-Body Systems [[electronic resource] /] / by Hal Tasaki
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-41265-2
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (534 pages)
Collana	Graduate Texts in Physics, , 1868-4513
Disciplina	521.015118
Soggetti	Superconductivity Superconductors Mathematical physics Statistical physics Phase transitions (Statistical physics) Physics Strongly Correlated Systems, Superconductivity Mathematical Physics Statistical Physics and Dynamical Systems Phase Transitions and Multiphase Systems Mathematical Methods in Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Basics of quantum spin systems.-Long-range order and spontaneous symmetry breaking in the classical and quantum Ising models -- Long-range order and spontaneous symmetry breaking in the antiferromagnetic Heisenberg model -- Long-range order and “spontaneous symmetry breaking” in Bose-Einstein condensates.-Affleck-Kennedy-Lieb-Tasaki model -- Haldane phase.-The origin of ferromagnetism -- Mathematical appendices -- Solutions -- Index.
Sommario/riassunto	This book is a self-contained advanced textbook on the mathematical-physical aspects of quantum many-body systems, which begins with a pedagogical presentation of the necessary background information before moving on to subjects of active research, including topological

	phases of matter. The book explores in detail selected topics in quantum spin systems and lattice electron systems, namely, long-range order and spontaneous symmetry breaking in the antiferromagnetic Heisenberg model in two or higher dimensions (Part I), the Haldane phenomenon in antiferromagnetic quantum spin chains and related topics in topological phases of quantum matter (Part II), and the origin of magnetism in various versions of the Hubbard model (Part III). Each of these topics represents certain nontrivial phenomena or features that are invariably encountered in a variety of quantum many-body systems, including quantum field theory, condensed matter systems, cold atoms, and artificial quantum systems designed for future quantum computers. The book's main focus is on universal properties of quantum many-body systems. The book includes roughly 50 problems with detailed solutions. The reader only requires elementary linear algebra and calculus to comprehend the material and work through the problems. Given its scope and format, the book is suitable both for self-study and as a textbook for graduate or advanced undergraduate classes. .

2.	Record Nr.	UNINA9910983376503321
	Autore	Yao Wei
	Titolo	Active Control of Large-Scale Offshore Wind Farms Connected Via VSC-HVDC / / by Wei Yao, Hongyu Zhou, Yongxin Xiong, Jinyu Wen
	Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2025
	ISBN	9789819793464
	Edizione	[1st ed. 2025.]
	Descrizione fisica	1 online resource (288 pages)
	Collana	Power Systems, , 1860-4676
	Altri autori (Persone)	ZhouHongyu XiongYongxin WenJinyu
	Disciplina	621.042
	Soggetti	Renewable energy sources Electric power production Offshore structures Renewable Energy Electrical Power Engineering Offshore Engineering
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa

Livello bibliografico	Monografia
Nota di contenuto	Structure and Control of Offshore Wind Farms Connected via VSC-HVDC -- Vector Modeling of Large-scale Offshore Wind Farms Considering Dynamic Collection Lines -- Active Energy Control of Converter Stations to Cope With Onshore Grid-Side Faults -- Enhancement Method for Grid-Side Fault Ride-Through Capability Based on Multi-Mode Matching -- Characteristics Analysis and Suppression of Onshore Valve-Side Fault -- Characteristics Analysis and Suppression of DC Submarine Cable Disconnection Fault -- Characteristics Analysis and Suppression of Offshore Wind-Farm-Side Fault -- Communication-Based Coordinated Control for Active Frequency Support -- Communication-Free Coordinated Control for Active Frequency Support -- Consensus-Based Distributed Frequency Support Control for Offshore Wind Farms -- Coordinated Frequency Support Control for Multi-AC Power Grids.
Sommario/riassunto	This book provides a detailed study of the active control methods for large-scale offshore wind farms connected via flexible high-voltage direct current (VSC-HVDC) transmission systems. Firstly, it introduces the basic structure and fundamental control of offshore wind farms connected via VSC-HVDC systems, and proposes a vector modeling method for them. Furthermore, it analyzes the fault characteristics of offshore wind farms connected via VSC-HVDC systems under different fault conditions, and proposes an active fault suppression method based on energy control. Finally, it introduces the method of offshore wind farms connected via VSC-HVDC systems to support the grid frequency. From basic concepts to self-active safety control, and then to active support control of the grid, this book systematically introduces the active control methods of large-scale offshore wind farms connected via VSC-HVDC systems. In particular, it introduces some advanced control methods from the perspective of energy. This book is a useful reference for undergraduate and graduate students interested in offshore wind farms and VSC-HVDC, researchers studying fault ride-through and active frequency support of offshore wind farms connected via VSC-HVDC systems, as well as engineers.