1. Record Nr. UNINA9910463339303321

Autore	Fradkin Eduardo
Titolo	Field theories of condensed matter physics / / Eduardo Fradkin, University of Illinois at Urbana-Champaign [[electronic resource]]
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2013
ISBN	1-107-23327-5 1-107-30105-X 1-107-25358-6 1-107-31388-0 1-107-30613-2 1-107-30833-X 1-299-40885-0 1-107-31168-3 1-139-01550-8
Edizione	[Second edition.]
Descrizione fisica	1 online resource (xvi, 838 pages) : digital, PDF file(s)
Disciplina	537.6/23
Soggetti	High temperature superconductivity Hubbard model Antiferromagnetism
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Machine generated contents note: 1. Introduction; 2. The Hubbard model; 3. The magnetic instability of the Fermi system; 4. The renormalization group and scaling; 5. One-dimensional quantum antiferromagnets; 6. The Luttinger liquid; 7. Sigma models and topological terms; 8. Spin liquid states; 9. Gauge theory, dimer models, and topological phases; 10. Chiral spin states and anyons; 11. Anyon superconductivity; 12. Topology and quantum Hall effect; 13. The fractional quantum Hall effect; 14. Topological fluids; 15. Physics at the edge; 16. Topological insulators; 17. Quantum entanglement; References; Index.
Sommario/riassunto	Presenting the physics of the most challenging problems in condensed matter using the conceptual framework of quantum field theory, this

book is of great interest to physicists in condensed matter and high energy and string theorists, as well as mathematicians. Revised and updated, this second edition features new chapters on the renormalization group, the Luttinger liquid, gauge theory, topological fluids, topological insulators and quantum entanglement. The book begins with the basic concepts and tools, developing them gradually to bring readers to the issues currently faced at the frontiers of research, such as topological phases of matter, quantum and classical critical phenomena, quantum Hall effects and superconductors. Other topics covered include one-dimensional strongly correlated systems, quantum ordered and disordered phases, topological structures in condensed matter and in field theory and fractional statistics.