Record Nr. UNINA9910819729703321 Order, disorder and criticality: advanced problems of phase transition **Titolo** theory / / editor, Yurij Holovatch Pubbl/distr/stampa River Edge, NJ,: World Scientific, c2004 **ISBN** 1-281-87700-X 9786611877002 981-256-544-2 Edizione [1st ed.] Descrizione fisica 1 online resource (302 p.) Altri autori (Persone) HolovatchYurij Disciplina 530.4/74 Soggetti Phase transformations (Statistical physics) Critical phenomena (Physics) Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Pref. by Yurij Holovatch and Ivan Franko. "This book is based on the review lectures that were given in Lviv (Ukraine) in March 2002 at the 'Ising lectures'--a traditional annual workshop on phase transitions and critical phenomena which aims to bring together scientists working in the field of phase transitions with university students and those who are interested in the subject"--P. 4 of cover. Includes bibliographical references and index. Nota di bibliografia Nota di contenuto Preface; CONTENTS; CHAPTER 1 MATHEMATICAL THEORY OF THE ISING MODEL AND ITS GENERALIZATIONS: AN INTRODUCTION Yuri Kozitsky: CHAPTER 2 RELAXATION IN QUANTUM SPIN CHAINS: FREE FERMIONIC MODELS Dragi Karevski; CHAPTER 3 QUANTUM PHASE TRANSITIONS IN ALTERNATING TRANSVERSE ISING CHAINS Oleg Derzhko; CHAPTER 4 PHASE TRANSITIONS IN TWO-DIMENSIONAL RANDOM POTTS MODELS Bertrand Berche and Christophe Chatelain; CHAPTER 5 SCALING OF MIKTOARM STAR POLYMERS Christian von Ferber; CHAPTER 6 FIELD THEORETIC APPROACHES TO THE SUPERCONDUCTING PHASE TRANSITION Flavio S. Nogueira and Hagen Kleinert; Index Sommario/riassunto This book reviews some of the classic aspects in the theory of

> phasetransitions and critical phenomena, which has a longhistory. Recently, these aspects are attracting much attention due toessential

new contributions. The topics presented in this bookinclude:

mathematical theory of the Ising model; equilibrium andnonequilibrium criticality of one-dimensional quantum spin chains; influence of structural disorder on the critical behaviour of thePotts model; criticality, fractality and multifractality of linkedpolymers; fieldtheoretical approaches in the superconducting phasetransitions.