1. Record Nr. UNINA9910784870103321 Autore Gonzalo Julio A (Julio Antonio) Titolo Effective field approach to phase transitions and some applications to ferroelectrics [[electronic resource] /] / Julio A. Gonzalo Singapore; ; Hackensack, NJ, : World Scientific, c2006 Pubbl/distr/stampa **ISBN** 1-281-37306-0 9786611373061 981-277-312-6 Edizione [2nd ed.] Descrizione fisica 1 online resource (468 p.) World Scientific lecture notes in physics; ; v. 76 Collana Disciplina 530.414 530.474 Phase transformations (Statistical physics) Soggetti Field theory (Physics) Ferroelectric crystals Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Preface ; Preface to the Second Edition Contents : Part 1 Mean Field Approach to Cooperative Phenomena ; 1.2 Liquid-vapor transitions : 1.1 An overview ; 1.3 Ferromagnetic transitions ; 1.4 Superconductive transitions : 1.5 Orderdisorder transitions in alloys 1.6 Ferroelectric transitions 1.7 Superfluid transitions : 1.8 Ferroelastic transitions : 1.9 Landau theory and effective field approach. Role of fluctuations ; 1.10 Equation of state and the scaling function : Appendix: Effective field approach to superconductors Part 2 Some Applications to Ferroelectrics: 1970-1991 2.1 Behavior at T = Tc of pure ferroelectric systems with second order phase transition ; 2.2 Effects of dipolar impurities in small amounts ; 2.3 Mixed ferro-antiferroelectric systems and other mixed ferroelectric systems 2.3.1 Comment on ""Ferroelectricity in zinc cadmium telluride""

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Sommario/riassunto

This book begins by introducing the effective field approach, the simplest approach to phase transitions. It provides an intuitive approximation to the physics of such diverse phenomena as liquid-vapor transitions, ferromagnetism, superconductivity, order-disorder in alloys, ferroelectricity, superfluidity and ferroelasticity. The connection between the effective field approach and Landau's theory is stressed. The main coverage is devoted to specific applications of the effective field concept to ferroelectric systems, both hydrogen bonded ferroelectrics, like those in the TGS family, and ox