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| 1. Record Nr. | UNINA9910956107603321 |
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| Titolo | Field Quantization // by Walter Greiner, Joachim Reinhardt |
| Pubbl/distr/stampa | Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 1996 |
| ISBN | 3-642-61485-X |
| Edizione | [1st ed. 1996.] |
| Descrizione fisica | 1 online resource (XIV, 441 p. 4 illus.) |
| Disciplina | 530.12 |
| Soggetti | Quantum theory Spintronics Quantum Physics |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | "With 46 figures, and 52 worked examples and problems." |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | I. Many-Body Systems and Classical Field Theory -- 1. Classical and Quantum Mechanics of Particle Systems -- 2. Classical Field Theory -- II. Canonical Quantization -- 3. Nonrelativistic Quantum Field Theory -- 4. Spin-0 Fields: The Klein—Gordon Equation -- 5. Spin-% MathType!MTEF!2!1!+- % feaagCart1ev2aaatCvAUfeBSjuyZL2yd9gzLbvyNv2CaerbuLwBLn % hiov2DGi1BTfMBaeXatLxBI9gBaerbd9wDYLwzYbItLDharqqubsr % 4rNCHbGeaGqiVu0Je9sqqrpepC0xbbL8F4rqqrFfpeea0xe9Lq-Jc9 % vqaqpepm0xbba9pwe9Q8fs0-yqaqpepae9pg0FirpepeKkFr0xfr-x % fr- xb9adbaqaeeGaciGaaiaabeqaamaabaabaaGcbaWaaSaaaeaaca % alXaaabaGaaGOMaaaaaaa!377B!]]. |
| Sommario/riassunto | Theoretical physics has become a many-faceted science. For the young student it is difficult enough to cope with the overwhelming amount of new scientific material that has to be learned, let alone obtain an overview of the entire field, which ranges from mechanics through electrodynamics, quantum mechanics, field theory, nuclear and heavy-ion science, statistical mechanics, thermodynamics, and solid-state theory to elementary-particle physics. And this knowledge should be acquired in just 8-10 semesters, during which, in addition, a Diploma or Master's thesis has to be worked on or examinations prepared for. All this can be achieved only if the university teachers help to introduce the student to the new disciplines as early on as possible, in order to |

create interest and excitement that in turn set free essential new energy. At the Johann Wolfgang Goethe University in Frankfurt we therefore confront the student with theoretical physics immediately, in the first semester. Theoretical Mechanics I and II, Electrodynamics, and Quantum Mechanics I - An Introduction are the basic courses during the first two years. These lectures are supplemented with many mathematical explanations and much support material. After the fourth semester of studies, graduate work begins, and Quantum Mechanics II - Symmetries, Statistical Mechanics and Thermodynamics, Relativistic Quantum Mechanics, Quantum Electrodynamics, the Gauge Theory of Weak Interactions, and Quantum Chromodynamics are obligatory.
