1. Record Nr.   UNINA9910457958703321

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   Titolo   Dynamics of charged particles and their radiation field / / Herbert Spohn [[electronic resource]]

   Pubbl/distr/stampa Cambridge : , : Cambridge University Press, , 2004

   ISBN   1-107-15023-X
                     1-280-54009-5
                     9786610540099
                     0-511-21437-5
                     0-511-21616-5
                     0-511-21079-5
                     0-511-31506-6
                     0-511-53517-1
                     0-511-21256-9

   Descrizione fisica 1 online resource (xvi, 360 pages) : digital, PDF file(s)

   Disciplina   530.14/1

   Soggetti   Electromagnetic theory
                     Quantum electrodynamics

   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 (p. 339-357) and index.

   Nota di contenuto ; 1. Scope, motivation, and orientation -- ; pt. I. Classical theory -- ; 2. A charge coupled to its electromagnetic field -- ; 3. Historical notes -- ; 4. The energy-momentum relation -- ; 5. Long-time asymptotics -- ; 6. Adiabatic limit -- ; 7. Self-force -- ; 8. Comparison dynamics -- ; 9. The Lorentz-Dirac equation -- ; 10. Spinning charges -- ; 11. Many charges -- ; 12. Summary and preamble to the quantum theory -- ; pt. II. Quantum theory -- ; 13. Quantizing the Abraham model -- ; 14. The statistical mechanics connection -- ; 15. States of lowest energy : states -- ; 16. States of lowest energy : dynamics -- ; 17. Radiation -- ; 18. Relaxation at finite temperatures -- ; 19. Behavior at very large and very small distances.

   Sommario/riassunto This book provides a self-contained and systematic introduction to classical electron theory and its quantization, non-relativistic quantum

electrodynamics. The first half of the book covers the classical theory. It discusses the well-defined Abraham model of extended charges in interaction with the electromagnetic field, and gives a study of the effective dynamics of charges under the condition that, on the scale given by the size of the charge distribution, they are far apart and the applied potentials vary slowly. The second half covers the quantum theory, leading to a coherent presentation of non-relativistic quantum electrodynamics. Topics discussed include non-perturbative properties of the basic Hamiltonian, the structure of resonances, the relaxation to the ground state through emission of photons, the non-perturbative derivation of the g-factor of the electron and the stability of matter.