

1. Record Nr.	UNINA9910789943803321
Autore	Hawkes P. W
Titolo	Principles of electron optics . Volume 1 Basic geometry optics [[electronic resource] /] / by P.W. Hawkes and E. Kasper
Pubbl/distr/stampa	London ; ; San Diego, : Academic Press, c1996
ISBN	1-283-39621-1 9786613396211 0-08-096241-6
Descrizione fisica	1 online resource (665 p.)
Altri autori (Persone)	KasperE <1933-> (Erwin)
Disciplina	537.5/6 537.56
Soggetti	Electron optics Electrons
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Basic Geometrical Optics; Copyright Page; Contents; Preface; Chapter 1 Introduction; 1.1 Organization of the subject; 1.2 History; PART I - CLASSICAL MECHANICS; Chapter 2. Relativistic Kinematics; 2.1 The Lorentz equation and general considerations; 2.2 Conservation of energy; 2.3 The acceleration potential; 2.4 Definition of coordinate systems; 2.5 Conservation of axial angular momentum; Chapter 3. Different Forms of Trajectory Equations; 3.1 Parametric representation in terms of the arc-length; 3.2 Relativistic proper-time representation; 3.3 The cartesian representation 3.4 Scaling rulesChapter 4. Variational Principles; 4.1 The Lagrange formalism; 4.2 General rotationally symmetric systems; 4.3 The canonical formalism; 4.4 The time-independent form of the variational principle; 4.5 Static rotationally symmetric systems; Chapter 5. Hamiltonian Optics; 5.1 Introduction of the characteristic function; 5.2 The Hamilton-Jacobi equation; 5.3 The analogy with light optics; 5.4 The influence of vector potentials; 5.5 Gauge transformations; 5.6 Poincares integral invariant; 5.7 The problem of uniqueness; 5.8 Resume; PART II - CALCULATION OF STATIC FIELDS Chapter 6. Basic Concepts and Equations6.1 General considerations;

6.2 Field equations; 6.3 Variational principles; 6.4 Rotationally symmetric fields; 6.5 Planar fields; Chapter 7. Series Expansions; 7.1 Azimuthal Fourier series expansions; 7.2 Radial series expansions; 7.3 Rotationally symmetric fields; 7.4 Multipole fields; 7.5 Planar fields; 7.6 Fourier-Bessel series expansions; Chapter 8. Boundary-Value Problems; 8.1 Boundary-value problems in electrostatics; 8.2 Boundary conditions in magnetostatics; 8.3 Examples of boundary-value problems in magnetostatics; Chapter 9. Integral Equations
9.1 Integral equations for scalar potentials
9.2 Problems with interface conditions; 9.3 Reduction of the dimensions; 9.4 Important special cases; 9.5 Resume; Chapter 10. The Boundary-Element Method; 10.1 Evaluation of the Fourier integral kernels; 10.2 Numerical solution of one-dimensional integral equations; 10.3 Superposition of aperture fields; 10.4 Three-dimensional Dirichlet problems; 10.5 Examples of applications of the boundary-element method; Chapter 11. The Finite-Difference Method (FDM); 11.1 The choice of grid; 11.2 The Taylor series method; 11.3 The integration method
11.4 Nine-point formulae
11.5 Iterative solution techniques; Chapter 12. The Finite-Element Method (FEM); 12.1 Formulation for round magnetic lenses; 12.2 Formulation for self-adjoint elliptic equations; 12.3 Solution of the finite-element equations; 12.4 Improvement of the finite-element method; 12.5 Comparison and combination of different methods; Chapter 13. Field-Interpolation Techniques; 13.1 One-dimensional differentiation and interpolation; 13.2 Two-dimensional interpolation; PART III - THE PARAXIAL APPROXIMATION; Chapter 14. Introduction
Chapter 15. Systems with an Axis of Rotational Symmetry

Sommario/riassunto

Principles of Electron Optics
