New Books - Livres Nouveaux - Новые Книги - Nuevos Libros

Thermonuclear Power

by T. S. Green (Atomic Weapons Research Establishment, Aldermaston, England) George Newnes, Ltd., London (1963) 176 pp, 80 figs., 45s net (46s3d by post).

Subjects: Thermonuclear fusion, Containment of a thermonuclear plasma, Heating of a plasma, Z pinch: I. Early developments, II. Fast pinch, Theta pinch, Mirror machines, Stellarator, Miscellaneous devices, Plasma physics, Diagnostics.

The Theory of Plasma Waves

by Thomas H. Stix (Plasma Physics Laboratory, Princeton University, Princeton, N.J., USA) McGraw-Hill Book Co., New York, London (1963) 240 pp, 76s.

Chapter titles: Topology of wave-normal surfaces, Waves in a cold uniform plasma, Energy flow and accessibility, Kruskal-Schwarzschild solutions for a bounded plasma, Free and forced oscillations of a cold cylindrical plasma, Plasma models with discrete structure, Longitudinal oscillations in a plasma of continuous structure, Derivation of the theory for a hot plasma in a magnetic field, Some applications of the equivalent dielectric tensor, Reflection and absorption of waves in a hot inhomogeneous plasma.

Plasma Physics and Magnetofluidmechanics

by Ali Bulent Cambel (Northwestern University, Evanston, Illinois, USA) McGraw-Hill Book Co., New York, London (1963) 352 pp, 89s.

An introductory textbook for the engineering student offering wide coverage of its subject and considerable material on plasma physics. It is directed mainly toward engineering applications and the design of technological devices and instruments.

Statistical Aspects of Plasma Physics

by R. Balescu (Faculté de Science, Université Libre de Bruxelles, Belgique) John Wiley and Sons, Ltd., London, New York (in press).

Contents: (Part 1) The general diagram method for classical gases, The short-time behavior of classical plasmas, The theory of plasma oscillations, The dispersion equation, The Van Kampen case treatment of the Vlasov equation, The long-time behavior of classical plasmas, The Landau (Fokker-Planck) approximation, Properties of the Landau equation, The ring approximation, Binary correlations in the ring approximation, The general description of a plasma in the ring approximation, The equilibrium state, Non-equilibrium stationary states and the theory of transport coefficients. (Part 2) Quantum-statistical systems: The general diagram method for quantum gases, Short-time behavior of quantum plasmas and the quantum Vlasov equation, Long-time behavior of quantum plasmas, The quantum statistical ring approximation, Binary correlations and the equilibrium state for an electron gas.

An Introduction to Waves, Rays and Radiation in Plasma Media

by Julius J. Brandstatter (Stanford Research Institute, Menlo Park, California, USA) McGraw-Hill Book Co., New York, London (1963) 704 pp, £ 5 16s 6d.

Treatment of various factors that affect the propagation of waves, rays and radiation in anisotropic plasmas. Macroscopic and microscopic description of such media, and derivation of electrodynamic and hydrodynamic coupling that can exist there.

(continued)
Contents: Atmospheres of the planets (W. W. Kellogg, C. Sagan), Comets (L. Bierman), Magnetic fields and spiral structure (D. G. Wentzel), Stellar evolution (S. Temesváry), Solar granulation (R. B. Leighton), The sun's magnetic field (H. W. Babcock), The solar corona and the interplanetary medium (R. Lüst), Ultraviolet and x rays from the sun (H. Friedman), Solar radio bursts (J. P. Wild), Stellar atmospheres: Magnetic, metallic (W. L. W. Sargent), Mass loss from stars (R. Weymann), Pulsating stars (S. A. Zhevakin), Novae and explosive variables (C. H. P. Gaposchkin), The content of galaxies: Stars and gas (M. S. Roberts), Extragalactic radio sources (T. A. Matthews), Cosmology (E. Schuecking), Radio telescopes (W. N. Christiansen), Celestial mechanics (D. Brouwer), Dynamics of galaxies (I. R. King), Interstellar dust (J. M. Greenberg).

Plasma Hydromagnetics

edited by Daniel Bershadler, Oxford University Press, London (1963) 156 pp, 36 s.

Eight papers from the Sixth Lockheed Symposium on Magnetohydrodynamics that present both experimental and theoretical results in molecular and macroscopic aspects of plasma behavior dynamics.

Waves in Anisotropic Plasmas

by William P. Allis (Massachusetts Institute of Technology), Solomon J. Buchsbaum (Bell Telephone Laboratories) and Abraham Bers (Massachusetts Institute of Technology), M. I. T. Press, Cambridge, Massachusetts, USA (1963) xii+288 pp, $7.50.

In Part 1 the authors deal with the general theory of plane waves in unbounded plasma and a magnetic field. Magneto-ionic, acoustic and magnetohydrodynamic regimes receive a unified treatment. In Part 2 they deal with guided-wave propagation in plasmas and associated conservation principles of energy and power flow.