

and Alloys. Among the topics covered in the subsequent chapters are vortex line structure and surface superconductivity. In selecting material for the book, the authors have drawn heavily on their own work and on work done in cooperation with deGennes. Their treatment is based on the Ginzburg-Landau theory of superconductivity, with which they are able to give a theoretical explanation for many of the reversible properties. The microscopic theory of superconductivity is introduced primarily to derive and justify the Ginzburg-Landau theory.

The second half of the book is mainly descriptive, because there is often no satisfactory theoretical analysis of the irreversible properties of type-II superconductors. Among the topics covered are flux trapping, flux movement and critical-current characteristics. In the final chapter, Thomas describes various possible applications for type-II superconductors.

The bibliography at the end of each chapter, as well as the author's detailed treatment of certain topics, makes the book suitable as a reference. However, enough introductory material is included to make the book self-contained and accessible to individuals without prior knowledge about superconductivity. Although the treatment of the reversible properties is somewhat mathematical, the book has been written with experimentalists in mind and should be useful to anyone with an interest in superconductivity.

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Dispersion Theories of Strong Interactions at Low Energy

By D. V. Shirkov,
V. V. Serebryakov,
V. A. Meshcheryakov

362 pp. Wiley (North-Holland, Amsterdam) New York, 1969. \$19.50

This monograph describes work done by the authors and their colleagues during the last ten years. The work was carried out in some isolation from the informal discussions, although not from the published work, of theorists outside the Soviet Union. Those who have worked on similar problems will find it interesting to examine more closely the authors' ideas about physics, as well as some mathematical techniques, even though many will find nothing very new in the way of results. As an introduction to the authors' contributions, I have certainly found it more readable and lucid than their original papers. No doubt this is not only because it is a more extended and

complete presentation, but also because the authors have themselves provided the translation.

The "Low Energy" in the title means that the authors restrict their attention to pion-nucleon and pion-pion scattering at energies where inelastic processes can be either neglected or replaced by a few parameters. They are concerned in part with the phenomenological description of the data, and in part with a critique of the bootstrap idea—that is, that hadron properties involve a self-consistent satisfaction of dispersion relations. Their point is that a closed, unique bootstrap is not possible within the low-energy domain as they consider it; very few would argue with this conclusion, although others ascribe two different reasons that are more directly motivated by experiment. Linearly rising Regge trajectories seem to force themselves on our attention, suggesting support for the Chew-Mandelstam idea of Regge poles as a fundamental concept and perhaps as a "boundary condition." Certainly with the advent of SU(3) it became clear that no dynamical scheme could possibly be complete that did not treat strange and nonstrange particles on an equal footing.

Although the book's topic may seem almost old-fashioned, low-energy hadron phenomenology is always in ferment, and renewed attention is being given to exploitation of analyticity properties in extracting significant parameters from experimental results. This book includes some original techniques and ideas that may be quite useful for this purpose. The discussion often utilizes kinematical approximations to clarify qualitative features; these approximations are now avoided by most workers, but their presence in a book helps to increase its readability. The calculations are presented clearly and in sufficiently explicit detail that a student preparing for research in this specialized area could read it with profit and understanding.

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Feedback and Dynamic Control of Plasmas, no. 1 (conf. proc. AIP Symposium on Feedback and Dynamic Control of Plasmas, Princeton, N. J., 1970). T. K. Chu, H. W. Hendel, eds. 364 pp. AIP, New York, 1970.

Hyperon Resonances-70. (Conf. proc., Duke University, Durham, N. C., 24, 25 April 1970.) E. C. Fowler, ed. 505 pp. Moore Publishing, Durham, N. C., 1970.

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