lectures give an extremely useful and general description both of the symmetries and dynamics of weak interactions. This short and lucid treatment makes an excellent introduction to the subject. On the other hand from the notes of the lectures on bootstraps I have obtained the impression that trying to solve strong interaction problems by means of self-consistent methods is at present little more than a clever idea. The ultimate program is highly ambitious, but the calculations done thus far are over-simplified and are not convincing. If a solution to the problem of strong interactions is to be found along the lines outlined by Cutkosky, much ingenuity will be required and plenty of hard work.

The remaining contributions are by B. W. Lee on the group SU(6) and current algebras, and by T. D. Lee on the possible noninvariance under charge conjugation of the electromagnetic interactions of strongly interacting particles.

This book, like most volumes of lecture notes, contains some material that is unpolished and hastily considered. To compensate for these defects, the aim should be for high speed of publication and low cost. The present publisher has failed on both of these counts. However, remarkably enough, very little is obsolete, and the work promises to be useful for some time to come.

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The reviewer, a professor of physics at Indiana University, specializes in the theory of elementary particles.

Generalized functions

FOURIER TRANSFORMS AND THE THEORY OF DISTRIBUTIONS. By J. Arsac. Trans. from French by A. Nussbaum, G. C. Heim. 318 pp. Prentice-Hall, Englewood Cliffs, N. J., 1966. $14.00

by Theodor Teichmann

The theory of distributions, or of generalized functions, has provided a very effective extension of the domains of many important mathematical operations, and thus has made possible the direct application of important applied mathematical techniques without special subtle considerations or purely heuristic justification.

This book presents a development centered mainly around the Fourier transform and its application to optical and communication problems and to some extent to partial differential equations. The treatment itself is a rather peculiar mixture. There is a relatively abstract mathematical section that seems unnecessarily detailed for the applications, yet not deep or precise enough from the purely mathematical angle, with many important results being stated without proof. Many useful formulas involving distributions may be found in the book, provided one goes through it systematically. Despite the heavy mathematical introduction, the treatment of the applications is mainly formal or heuristic, thus making the mathematical introduction even more superfluous. While there is much useful and indeed interesting material in the book it is unfortunately rendered confusing by the uneven mathematical tenor. The translators have not ameliorated this situation with a rather questionable semiliteral translation in order "to preserve the spirit of the original."

* * *

The reviewer is a theoretical physicist at the General Atomic Division of General Dynamics Corp., San Diego.

NEW BOOKS

ELEMENTARY PARTICLES & FIELDS

Algebraic Theory of Particle Physics. By Yuval Ne'eman. 334 pp. W. A. Benjamin, New York, 1967. Paper $5.95

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Intense Neutron Sources. Conf. proc. (Santa Fe, New Mexico, Sept. 1966) US Atomic Energy Commission, Washington, D. C., 1967. Paper $3.00

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The Properties of Liquid and Solid Helium. By J. Wilks. 703 pp. Oxford U. Press, London, 1967. $24.00

Optical Properties of Metals. By A. V. Sokolov. 472 pp. Trans. from Russian by S. Chomet. American Elsevier, New York, 1967. $22.75

High Field Transport in Semiconductors. By Esther M. Conwell. (Supplement 9, Solid State Physics, F. Seitz, D. Turnbull, H. Ehrenreich, eds.) 293 pp. Academic Press, New York, 1967. $12.00

Phase Stability in Metals and Alloys. Conf. proc. (Geneva, March 1966). Peter S. Rudman, John Stringer, Robert I. Jaffee, eds. 594 pp. McGraw-Hill, New York, 1967. $21.50

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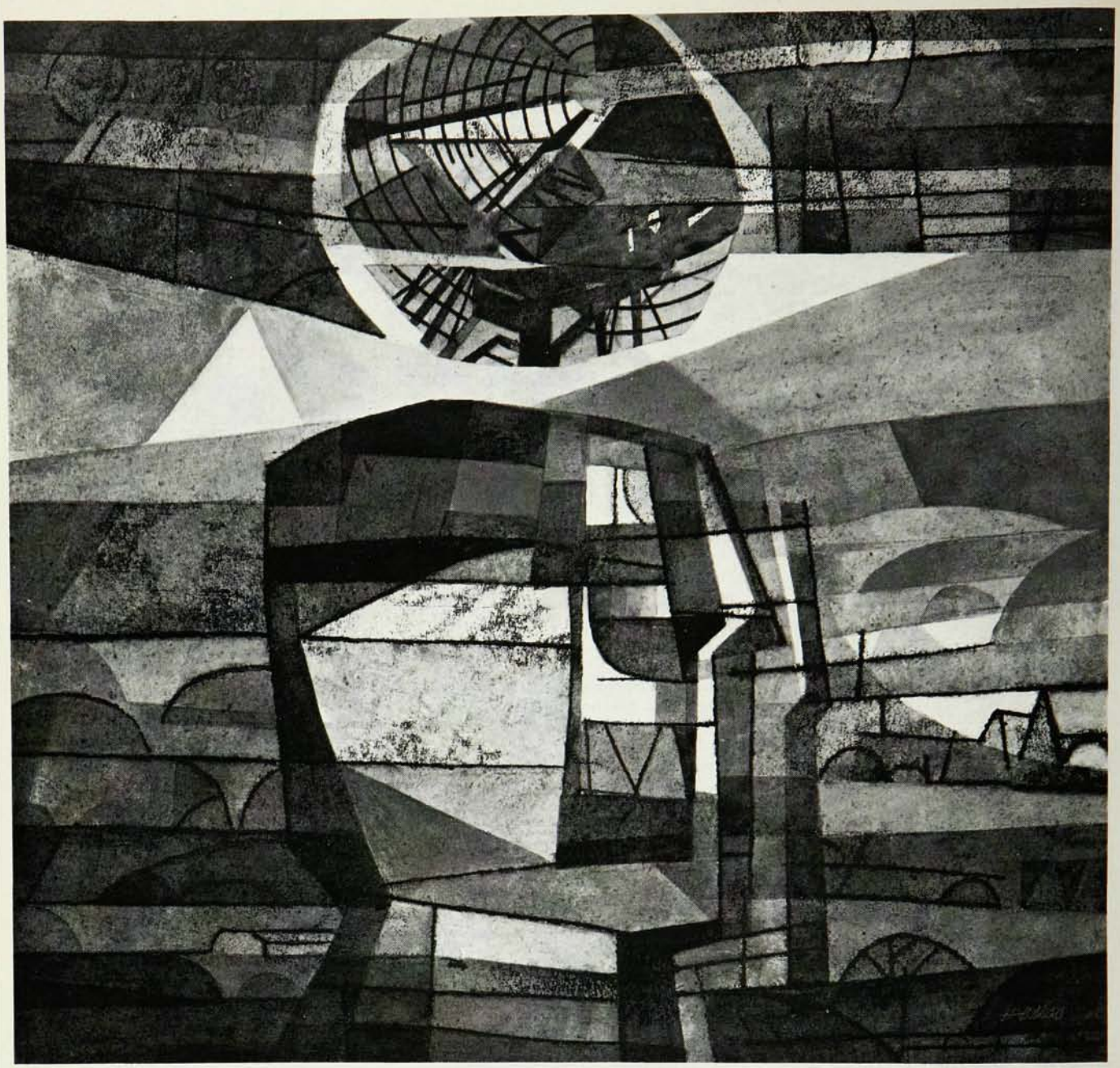

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