

rather interesting consequence of distribution theory is not only that many of the fallacious (!) methods long used by applied mathematicians are found to be correct, but also that they could in some cases have gone much farther if they had only dared.

This new book on the subject begins with a concise but very lucid account of basic Fourier integral theory, followed by a definition of distributions and their fundamental properties. The second part of the book deals with some applications of these ideas to physical problems. There are chapters on diffraction and circuit theory followed by a long chapter on the use of Fourier transforms for solving partial differential equations. The third part is devoted to linear filters, approximation theory, stochastic functions, and related problems. And the book ends with a useful chapter on the numerical calculation of Fourier transforms.

It is a welcome addition to the regrettably inadequate literature on the subject. The reader will at times be disappointed that many of the applications are well known examples of Fourier transforms such as one can find in any classical text, in fact, such as one could handle very well without using distributions at all. However, they do make clear the meaning of distributions and demonstrate the saving in expression, and consequently in concepts, which one can obtain by using them. A striking example of this occurs, in fact, in the pure mathematical introductory section, viz. the elegant proof of the Poisson summation formula.

There are a number of minor typographical errors.

Information Theory, Statistical Decision Functions, Random Processes. Conf. Proc. (Prague, June 1959). Jaroslav Kožešník, ed. 843 pp. (Publishing House of the Czechoslovak Academy of Sciences, Prague) Academic Press, Inc., New York, 1960. \$22.00. Reviewed by George L. Turin, University of California, Berkeley.

TO review in detail a book of 843 pages, containing 48 papers on a variety of subjects and in four languages, and to do this within the space of a few hundred words, is a task that would discourage the most stalwart of reviewers. The present reviewer, not even a bit stalwart, will content himself with giving a few statistical data and general comments on the contents and tone of the volume.

The book is a reprint of the original Transactions of the Second Prague Conference on Information Theory, Statistical Decision Functions and Random Processes, held on June 1-6, 1959. (The First Prague Conference met during November 28-30, 1956; the Third will take place during June 4-16, 1962.) The papers in it may be classified in many ways: for example, by language (English-30, French-7, Russian-6, German-5), country of origin (Czechoslovakia-22, Poland-6, Germany-4, Russia-4, USA-4, Hungary-3, Rumania-2, France-1, Lithuania-1, Sweden-1), or length (ranging from 2 to 148 pages). More importantly, one may make a (somewhat arbitrary)

classification by subject matter, using categories suggested by the title: Probability Theory and Random Processes-25, Information Theory (in the sense of Shannon)-12, Decision Theory-11.

This last category requires a word of explanation. In the United States, the term information theory (or, sometimes, statistical communication theory) is often used more broadly than the extent implied in the second category; in this broader sense, it comprises topics in all three categories, but looked at from the viewpoint of the communication engineer. It is therefore important to point out that most of this volume will not be of immediate interest to the engineer, versed though he may be in statistical communication theory. Most of the papers are written by and for probability theorists and statisticians who may have a marginal interest in communication theory: The tone is generally that of the *Annals of Mathematical Statistics*, not of the *IRE Transactions on Information Theory*. A final classification (made by trying to imagine in which of the two above-cited journals each paper might have appeared at the present time) will emphasize the point: papers primarily of interest to probability theorists-36 (710 pp.), papers primarily of interest to engineers-12 (124 pp.). In the first of these groups appear such papers as "On Random Solutions of Integral Equations in Banach Spaces". In the second one finds, for example, "Filters and Predictors Which Adapt Their Values to the Unknown Parameters of the Input Process".

For further details on the volume, the reader is referred to *IRE Trans. on Inform. Thy.*, IT-7, 201-204 (July 1961), wherein a list of titles and some abstracts are given. In general, the quality of the papers is high, and the Institute of Information Theory and Automation of the Czechoslovak Academy of Sciences may feel itself amply rewarded for its efforts in organizing this series of symposia.

Waves in Layered Media. By Leonid M. Brekhovskikh. Transl. from Russian by David Lieberman. Transl. edited by Robert T. Beyer. Vol. 6 of Applied Mathematics and Mechanics, editor-in-chief F. N. Frenkiel. 561 pp. Academic Press Inc., New York, 1960. \$16.00. Reviewed by Nicholas Chako, Queens College.

IT is only in the last few years that Russian scientific monographs have been translated into English or German, whereas the reverse process has been going on for at least a quarter of a century. Most of the Russian books that have been translated are on an advanced level and, in many cases, the English or German translations are revised editions or offer improvements on the original texts. Many contain original researches unduplicated elsewhere. Consequently, the translations constitute an important contribution to the large community of scientists not familiar with Russian.

Professor Brekhovskikh's book belongs to these distinguished translations. It contains largely his own in-