braries of all those who have an interest in the experimental study of the atomic arrangements in single crystals.

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Probabilistic and statistical problems

AN INTRODUCTION TO PROBABILITY THEORY AND ITS APPLICATIONS. VOL. 2. By William Feller, 626 pp. Wiley, New York, 1966. $12.00

by T. Teichmann

The first volume of Feller's *An Introduction to Probability Theory and its Applications* set a new and welcome trend in the field by combining mathematical rectitude with practical applicability in a manner satisfying both to purists and to those interested in applying results. Its many readers, most of whom had probably given up hope of seeing volume 2 will welcome its somewhat unexpected appearance, after some sixteen years, and find that the wait, if lengthy, has been worthwhile.

This second volume embraces a variety of topics connected with continuous sample spaces. It includes lengthy discussions, both abstract and applied of the most "popular" densities (to wit, a uniform, an exponential and a normal, and their extension to more than one dimension). The basic measure-theoretic foundation of the theory is given, followed by the general properties of distributions and moments in multidimensional spaces. The remainder of the book then involves interrelated discussions of important subjects in probability theory together with important applicable techniques in analysis. The probabilistic subjects include the laws of large numbers, the central limit theorem, infinitely divisible distributions, Markov processes, random walks and renewal theory. The techniques include Laplace and Fourier transforms, semigroups and general harmonic analysis. It is not practical to list all the significant problems treated or discussed, and even those treated quite cursorily often give applicable results or criticisms.

The concentrated information presented in this volume is alleviated by the conversational (and sometimes mildly ironical) style of its presentation and by the frequent interposition of examples of both mathematical and statistical interest, including many left for the reader. This book will prove interesting and helpful to almost everyone concerned with probabilistic or statistical problems that are not completely elementary, and its readers will be grateful to Feller for his perseverance and enthusiasm in completing his venture.

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Dynamical theory of diffraction

MICROSCOPIE ELECTRONIQUE DES LAMES MINCES CRISTALLINES. By G. Saada. 324 pp. Masson, Paris, 1966. 76 F.

by L. Marton

A few months ago I had the pleasure of reviewing in these columns a book by P. B. Hirsch, A. Howie, R. B. Nicholson, D. W. Pashley and M. J. Whelan entitled *Electron Microscopy of Thin Crystals.* It is no accident that almost simultaneously another book appeared on the same subject by a French author.

For many years the electron microscope was an instrument used by practically no one but the biologists and sometimes the chemists. Gradually it was accepted by the metallurgists as a useful tool, but it was hard to convince any physicist that the electron microscope would be useful to the physicist. Maybe the explanation is that most of the phenomena in which the physicist is interested were somewhat below the resolving power achieved in the early microscopes, and that only the recent development of improved resolution of the microscope has made physics research accessible to the instrument. Whatever the cause may be, I am happy to report that the situation is very rapidly changing and the almost simultaneous appearance of these two books is a good sign of the acceptance of the electron microscope by the physicist.

I do not want to imply that the improved resolution of the electron microscope alone is responsible for this new development. The development of the dynamical theory of diffraction was one of the prime reasons why interpretation of the electron micrographs of crystalline matter became possible, and without interpretation, none of the experimental results would

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