

The author reviews relativistic quantum mechanics, discusses space-time symmetries and then analyzes weak interactions in detail. The presentation includes the decay of leptons and hadrons. There are chapters on the leptonic and nonleptonic decays of the hadrons, both without and with strangeness change. The K_1^0 - K_2^0 problem is analyzed and the need for the intermediate boson is discussed. The book concludes with a list of suggested experiments, many of which have already been carried out.

Because the author attempts to instruct and enlighten his audience in terms of the then current literature, there is emphasis on theoretical treatment that is no longer adequate. For instance, much of the presentation is based on the Sakata model, since unitary symmetry and its consequences had not yet been developed. The book is not too useful for the initiate, nor as a self-learning tool. Thus, the basis for the V-A theory receives little attention, and there appear many factual statements that are not explained adequately.

The translation is good and the index and references are adequate. However, the print is so small as to make long reading periods uncomfortable.

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A particle theoretician, E. M. Henley is a member of the physics faculty at the University of Washington in Seattle.

Linear boundary values

PROBLEMS OF MATHEMATICAL PHYSICS. By N. N. Lebedev, I. P. Skalskaya and Y. S. Uflyand. Transl. from Russian by Richard A. Silverman. 429 pp. Prentice-Hall, Englewood Cliffs, New Jersey, 1965.

by **T. Teichmann**

Linear boundary-value problems constitute a substantial portion of mathematical physics, and have received a corresponding amount of attention in both textbooks and reference works. Because of the power of the methods involved, and the general degree of sophistication which has become current in most modern presentations, there has been a tendency to reduce

the number of problems presented to the most well known; and to leave the others, if at all mentioned, as exercises for the reader. From the conceptual point of view this is completely satisfactory, and avoids too heavy volumes! In many applications, however, it is desirable to have available details of both techniques and problems that are not always easily found in standard works. This volume, by several well known applied mathematicians from the Physico-Technical Institute in Leningrad, helps to cover this area.

It consists essentially of a series of linear-boundary or initial-value problems of classical physics, together with hints for their solutions and specific answers, as well as a section of detailed solutions of those problems which seem to require it. The problems are generally of the kind one might expect to encounter in practical situations, rather than those aimed at the ingenuity of the reader. Worthy of special comment are a number of problems solved by conformal transformation (in particular Schwartz-Cristoffel's) and problems in all fields involving wedges, slots, bosses, etc. There is also a short, but useful supplement (written by E. Reiss) on approximate methods of solution. This book could serve as a useful supplement to a general course emphasizing conceptual problems, but will probably be of greatest value as a reference for the practicing applied mathematician or physicist working with classical problems.

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The reviewer, a theoretician with General Dynamics Corporation, has worked for a number of years on the application of mathematical methods to problems in both classical and radiation physics.

Crystals and quantum mechanics

THEORETISCHE FESTKÖRPERPHYSIK, VOLUME 1. By Albert Haug. 518 pp. Franz Deuticke, Vienna, 1964.

by **Hans J. Hagger**

A large number of books on solid-state physics has been published since the rapid evolution of this field.

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