sented, and flow instability in parallel channels and natural circulation loops are treated.

Some 400 references, covering the literature up to about 1964, are listed in the bibliography.

A copy of *Boiling Heat Transfer and Two-Phase Flow* should be in every engineering library. Not only beginners but also experienced designers of boiling equipment should find it a valuable source book. The nonspecialist will find it an excellent reference.

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About the Reviewer: Hans K. Fauske is on the staff of Reactor Engineering at the Argonne National Laboratory, Argonne, Illinois. He graduated from Bergen Technic School, Bergen, Norway, in 1957 as an industrial chemist. His graduate work was done at the University of Minnesota, Minneapolis, Minnesota, from which he received the master's degree in Chemical Engineering in 1959. In 1963, he received a Doctor of Science degree from the Norwegian Institute of Technology, Trondheim, Norway. Since he started his association with Argonne National Laboratory, he has worked primarily in the field of two-phase flow, with emphasis on boiling-water and liquid-metal reactor problems, and general two-phase heat-transfer and fluid-flow problems. Dr. Fauske is the author and co-author of numerous articles on the subject of two-phase flow.

Neutron Transport Theory. By J. H. Tait, American Elsevier Publishing Company, Inc., New York (1965). 142 pp. $6.00.

The purpose of this book is "to give an introductory account of the mathematical methods used in neutron transport theory." One might feel that Davison, in his book of the same title, had done this as of 1955 and that, hence, this book would contain new material and would provide a refreshing treatment of the older material. The latter is true. The book is brief (the 142 pages include three appendices, the references, and an index) and clearly written. In fact, this is the strength of the book: much of Davison and some new material are compactly summarized in a form that makes the book valuable as an inexpensive reference.

The book consists of eight chapters. In the first, fundamentals such as cross sections and scattering laws are discussed, and in the second the equations of neutron transport theory are derived. Chapters three, four, and five are devoted to solutions of the monoenergetic transport equation by exact, expansion (e.g., spherical harmonics), and diffusion approximation methods. In chapters six and seven, the energy dependence of the neutron distribution is considered, first with the neglect, then with the inclusion, of spatial dependence. The numerical methods described in the eighth chapter, the description of solutions obtained by Chebyshev polynomial expansions, some discrete ordinates results, and the discussion of the thermal neutron Milne Problem are not found in Davison's book.

Despite the relative lack of new material in Tait's book, it should be welcome by physicists and engineers who are concerned with reactor theory but do not want the mathematical detail of Davison's book. Tait relies heavily on the results of others and puts emphasis on the understanding and evaluation of these results. For instance, in Davison's book the treatment of the Milne problem is obscured by the lengthy derivations of the Wiener-Hopf technique, while in Tait's presentation, derivation is minimized and the physics of the problem is emphasized by the reportorial style. On the other hand, the stating of results does not teach derivation; and if Tait's book were used in an introductory course, much interpolation by the teacher would be required. Another difficulty with using the results of others is that undefined notations and unstated assumptions creep into the formulae. In the discussion of the age theory approximation, the symbol for the slowing-down length is not defined and the assumption of a pure scatterer (made in Davison's book from which the discussion is taken) is not stated. In fact, many definitions in the formulae of the book are made tacitly. For the reader with experience, this is a minor inconvenience, but for the uninitiated reader this omission can be confusing.

The main weakness of the book is that it is not current. The preface is dated 1963, and one suspects that much of the text was written earlier. Invariant imbedding is not mentioned at all, and the existence of the method of singular equations is indicated only by a footnote. The chapter on numerical methods describes S_n methods which date from the 1958 Geneva conference and serve only to give the flavor of the approach.

In summary, for the experienced, the book can be a valuable resume of transport theory methods as of about five years ago. For the inexperienced, the book can also be valuable provided liberal use is made of the references.

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