what out-of-date. In spite of this criticism it is still felt that the book will be useful to many people.

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Resonance Absorption in Nuclear Reactors. By Lawrence Dresner. Pergamon, New York, 131 pp., $6.00.

Resonance Absorption in Nuclear Reactors by Lawrence Dresner is well written, concise, and logically developed. This book could form the basis for a one term course for either college seniors or first year graduate students who are primarily interested in reactor theory. It could also be profitably read by reactor physicists who are not familiar with all of the literature on the resonance absorption of neutrons.

Starting with the resonance absorption of neutrons in infinite media and ending with lumped absorbers, Dresner considers essentially all the problems whose solutions may be expressed analytically. Of special value is his development of standard approximation methods and the discussion of their validity. For example, when considering the infinite medium problem, he derives the Hurwitz adiabatic approximation and subsequently the Wigner and Goertzel-Greuling approximations. The discussion of the accuracy of the approximations is clearly and completely presented. Another approximation is often made in the calculation of resonance capture of lumped systems. In this approximation method of calculation, the capture rate of the lump is a function of its surface-to-volume ratio. The theoretical foundation of this approximate model is developed and its accuracy is discussed quantitatively.

When the nuclear resonance is either wide or narrow compared with the average energy lost by a neutron in one collision with any moderating atom, Dresner demonstrates the equivalence of the capture in an absorbing lump and the infinite medium problem.

The dependence of the resonance capture on the thermal excitation of the absorber is calculated assuming that the absorber is a free gas. The limitations of this model and the more sophisticated Lamb calculation are considered briefly.

In spite of the relative conciseness of this book, it is not intended to present isolated formulas suitable for the calculation of any one specific reactor resonance capture problem. Rather, by analytical calculations and physical arguments, it sets a firm foundation for the understanding of all the phenomena on which the resonance capture of neutrons depends.

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Nuclear Data Tables, Part 3; Nuclear Reaction Graphs. By J. B. Marion. U. S. Government Printing Office, Washington, D. C., 1960, $1.25.

The compilation of the Nuclear Data Tables is an effort to collect the more important tabular and graphical material contained within the enormous entity of low-energy nuclear physics. The seven sections of this particular volume represent a competent portion of this work. They will be of most interest to the experimentalist.

The first two sections deal with charged particle range, energy and scattering relations. The selection of material is good and well presented. The third topic deals with proton- and deuteron-induced neutron sources at zero degrees only. Notably absent are data at other angles and information regarding natural γ-n and α-n neutron sources often used as standards. The fourth section pertains largely to gamma ray detection with NaI crystals and includes an excellent set of crystal efficiency curves along with a number of graphs of angular correlation geometric correction factors. The general utility of the latter may be questionable. Sections five and six deal with penetrability and shift functions and radiology and shielding. The remaining three sections deal with a wide range of miscellaneous formulas, tables, and graphs. They contain possibly the best and worst of the compilation. For example, a handy list of gamma ray and accelerator energy calibration points is given and a nice graphical and algebraic outline of classical kinematics is presented. Not so useful is a semilog plot of function e^{-x}, something for which the reviewer would tend to use a slide rule. The bibliography throughout the compilation is largely limited to review articles or texts and the references are generally, though not universally, correct.

In the preparation of any compilation of this type the major problem is the selection of material. For the student and for the worker in fields other than experimental nuclear physics the information contained in this compilation should be very useful. The physicist actively involved in experimental nuclear work will probably find the review articles and reference volumes available in his personal library a more useful, handy, and certainly, more complete source of information. One should not, of course, lose sight of the fact that a few good reference volumes will cost some orders of magnitude more than this summary compilation.

A foremost requirement of any graphical presentation is legibility. In this respect this compilation is one of the best ever seen by the reviewer. The graphs are exceptionally clear and utilize well-chosen grid and coordinate systems.

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