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Huyghen's Principle (curiously called Huyghen's Premise). There is a short section on finite difference schemes for numerical solutions of partial differential equations. If there is any criticism to be made of this book, it is that more could have been done with that important topic. The treatment of Green's functions is exemplary, as is the chapter on the general theory of eigenvalues and eigenfunctions problems. All told, this book can be unreservedly recommended as an introduction to partial differential equations.

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Nuclear excited states

ANGULAR CORRELATION METHODS IN GAMMA-RAY SPECTROSCOPY. By A. J. Ferguson. 214 pp. (North-Holland, Amsterdam) Wiley, New York, 1965. \$8.50.

by G. K. Wertheim

Our knowledge of nuclear excited states is derived from the observation of radiation resulting from the transition between nuclear levels. The fundamental attributes of a nuclear state—its energy, spin, and parity—are obtainable from measurements some of which require considerable experimental sophistication. To interpret these measurements, it is necessary to apply a theory which, while simple in concept, presents computational complexities.

In his book A. J. Ferguson gives a concise summary of the pertinent theory, treating first the general case of successive nuclear radiation and then specific cases such as particle-gamma reactions, gamma-gamma angular correlations, and Coulomb excitation. A particularly valuable feature of the book is his treatment of the whole field of angular correlations according to a consistent set of conventions. Early in the volume he discusses the problem of the relative phases of reduced matrix elements and explains his choice of sign. He also chooses to use emission matrix elements for all gamma transitions. These conventions run counter to those of the standard reference in the field of

angular correlations—Biedenharn and Rose's 1953 article. His reasons for this controversial choice (as well as a rebuttal by Biedenharn and Rose) are included in the text.

The rest of the volume includes chapters on apparatus and numerical methods as well as on the coefficients and functions used in angular correlation analysis. The final part contains tables of Z , G_γ , and α coefficients which permit the evaluation of angular correlation functions up to spin 6 for dipole and quadrupole radiations. Tabulations of the more fundamental Clebsch-Gordon, Racah, and 9-j coefficients are not given but, as the author points out, these are readily available elsewhere. In any case, since data analysis is usually carried out by computers which can rapidly calculate the needed coefficients, such tables are no longer essential.

It is perhaps worth noting that the author's point of view is that of a nuclear physicist. That angular correlations may be perturbed is mentioned but excluded from further discussions. As a result, such topics as time-dependent correlations (currently gaining importance in solid state physics) and the attenuation of the correlation by fluctuating fields are not mentioned.

The level of treatment is such that anyone familiar with the quantum theory of angular momentum should have no difficulty in working through the book. It should prove useful to anyone who plans to enter the field of angular correlations.

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Measuring plasmas

PLASMA DIAGNOSTIC TECHNIQUES. Richard H. Huddleston and Stanley L. Leonard, eds. 627 pp. Academic Press, New York, 1965. \$19.50

by Harold P. Furth

In his introduction, Richard Huddleston makes an interesting point about the recent development of plasma physics. As a mere "application" of classical mechanics and electromagnetic theory, plasma physics might