taken pains to touch on almost everything worth mentioning, a discussion of isotopic spin systems and their bearing on comparative cross sections would have been useful in the last two chapters.

These are perhaps minor inadequacies compared to the way the various Feynman graphs and associated amplitudes have been treated, and this book would serve as a fair course text. A supplement with hints for solutions of the problems is likely to make the book all the more useful. The author's style and words at times, though, tend to overreach the student!

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Gamma-Ray Spectroscopy

P. Quittner
111 pp. Halsted, New York, 1973. $13.95

Only an occasional book is published that is concerned with the treatment of experimental data and the subsequent extraction of information. The ever-increasing use of on- and off-line computers in experimental programs has resulted in a considerable degree of sophistication in the reduction of data. Indeed, the potential of the computer has probably led to excessive data refinement in many instances. It is the application of computer-evaluation techniques that has prompted P. Quittner to write *Gamma-Ray Spectroscopy*.

The book is a condensed treatise of the subject material and should be considered as introductory in nature. There is, however, an extensive list of references that extends through the 1960's which is useful to those requiring more detailed information. The contents are mainly concerned with spectrum smoothing, detector response, peak location and peak-area determination. In addition there are several sections devoted to spectrum stripping, error analysis and miscellaneous applications. Because of their brevity these latter sections are largely descriptive and were most likely introduced for the sake of adding a measure of completeness to the book. Subjects such as coincidence techniques, summing effects and pulse pile-up have been adequately discussed in standard references to which one is directed by the author.

The important contribution of *Gamma-Ray Spectroscopy* is therefore contained in those sections dealing with problems requiring computerized treatment of data. Spectrum smoothing is introduced early because of its

general utilization. The method of least-squares fitting of the data to a polynomial is presented in some detail, and smoothing constants are reproduced from one of the references. Detector-response functions of full-energy peaks and regions outside the peaks logically follow spectrum smoothing. Quittner gives several analytical functions that have been used by a number of reputable workers in the field and discusses the corresponding merits and criteria for application.

This general format of the presentation of material from the references (including a fair number of tables and figures) persists through the sections of the book that deal with peak location, peak area determination and weighted least-squares resolution. I find no fault with this format, which is mostly a consequence of the nature of the subject being covered. Outside of a couple of flow charts, however, there is little practical information to help the inexperienced in the computerization of a detection system. This information, for the most part, is left for the reader to find elsewhere—an unfortunate omission because I think this book will find its greatest interest with those who are uninitiated and/or have limited computer facilities. Those working at established laboratories already have the knowledge and software to handle the types of data reduction discussed by the author.

Because of the trend toward the analysis of enormous amounts of data in basic research and areas of practical importance, I think this is a timely publication. It should serve well as a supplemental reference book and perhaps as a starting point for researchers beginning in this field.

Quittner has been quite active in gamma-ray spectroscopy as one can see by noting his publications in the list of references. I was particularly pleased with the fact that his book is conspicuously devoid of errors.

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new books

Nuclei, Nuclear Physics

Europhysics Study Conference on Intermediate Processes in Nuclear Reactions (Conf. Proc., Plitvice Lakes, Yugoslavia, 31 August–5 September 1972). N. Cindro, P. Kulišić, T. Mayer-Kuckuk, eds. 328 pp. Springer-Verlag, New York, 1973. $10.70

Nuclear Fission. R. Vandenbosch, J. R. Huizenga. 422 pp. Academic, New York, 1973. $29.50

Nuclear Level Schemes A=45 through A=