tions and particle exchanges. In Part II, "The Use of Models," Feld discusses early models and static hadron properties. This portion of the book has an annoying feature in that it is somewhat parochial (for example, Frisch's symmetrical model). The last section treats unitary symmetry and quark models including a chapter on weak interactions. The appendices contain tables of Clebsch-Gordan coefficients, Legendre polynominals, vector spherical harmonies, rotation matrices, two-body differential cross sections and SU(3) coefficients. The book is therefore very useful as a ready reference.

The book's style makes it readable, although some subjects appear fragmented by appearing in several sections. Most chapters contain many challenging problems for the graduate student.

In recent years several books have been published covering similar topics. This book is better than most, as good as the best and well worth the effort it took to write. It should be very useful to all graduate students as well as senior experimental physicists who are intrigued by this exciting field of physics.

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Holographie

By M. Françon
124 pp. Masson, Paris, 1969. 40 F

M. Françon, who is a renowned expert in optics, divided this introductory holography text into two parts. The first one is devoted to a rather qualitative exposition, which conveys a physical understanding of the phenomena involved in holography and in its main applications; for self-containedness, it includes a refresher of some fundamentals of physical optics. In the second part, the essential phenomena and applications are treated mathematically in greater detail.

Among the applications considered are: interferometry of fixed and moving bodies, microscopy, acoustical holography, optical filtering and pattern recognition. (A special chapter is devoted to the latter.)

The arrangement adopted enables the reader to gain, according to his needs, either a quick general understanding of the subject or a more detailed knowledge of the quantitative details. Added to the remarkable clarity achieved by the author, it makes this little book a worthy addition to the literature. Many bibliographical references are included, and there is a subject index (a notable feature in a French book!).

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Basic Nuclear Electronics

By Hai Hung Chiang
342 pp. Interscience, New York, 1969. $14.95

If pulse counting and digital logic are your concerns, you will find this little book a convenient reference on your shelf. It will quickly refresh your memory, for example, on what circuit parameters you need for a certain sharpness of pulse or flatness of gate.

The author, a nuclear-instrument specialist at Argonne National Laboratory and also at the National Tsing Hua University on Taiwan, is mainly a practical man. His aim is to bridge gaps between detectors and data, among tubes, transistors and integrated circuits, and between textbooks and practice. I think he succeeds quite well.

He also aims to be a teacher, and here I think his book is a bit uneven. The reader who must be told what a thermionic diode is, for example, should not be asked to understand that an emitter follower is analogous to a cathode follower until after he is made to realize what a cathode follower is. The author uses the term "negative resistance;" then, when it comes up later, he defines it.

These, though, are minor quibbles. Indeed you will get more out of the book if the basic facts of electronic life are familiar before you start. From that point on, though, you will learn a lot in the simple and compact explanations. About half of the book, chapter 1, is given to basic devices and circuits—pulses, delays, flip-flops and the like. Chapters 2 and 3 discuss pulse amplifiers, single-channel analyzers and multichannel analyzers. The fourth and last chapter may be the most useful. It shows and discusses the circuits of representative examples useful to the radiation watcher: two survey meters, a counter, a pulse generator, an oscilloscope and an integrated-circuit decade counter. The book accomplishes its mission simply and well.

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Propagation of Waves

By P. David and J. Voge
334 pp. Pergamon, New York, 1969. $11.00

This book is a 1969 English translation by J. B. Arthur of a 1966 French work by Pierre David and Jean Voge that deals with the behavior of electromagnetic waves as they are transmitted between two points on or near the earth's surface.

Written for engineers and physicists who are versed in Maxwell's equations and the subsequent formulation of the electromagnetic wave equations for **E** and **H** in free space, the book says practically nothing about radiation theory. Instead it emphasizes the modifications in the free-space wave by such factors as the flow of currents, interfaces between media, the earth's terrain, the troposphere and the ionosphere. There is a short chapter on the reception of unwanted radiations and a final chapter of considerable length on how the propagation is affected by wavelength. The book should be useful to workers in electromagnetic-wave propagation in the university and in governmental and industrial research and development laboratories.

Each chapter begins with a well written qualitative description of the problem (often containing historical perspective,) and of the model being used to solve it. The model is then analyzed, with the mathematical details being relegated to references in the footnotes, and the important results are emphasized. Some of the chapters contain a summary of a conclusion but none of them contain "homework" problems; yet this does not detract from the book's use as a study text or reference.

The introductory chapter treats such things as radio links, transmission and reception formulas, overall efficiency and a statistical study of variable fields. In the chapter on currents, general theory for current propagation in the terrain and in the ionosphere is set up and then reduced to fit certain extreme cases and recapitulated in a final table. The treatment of the passage of waves between two media discusses the oblique incidence phenomena of reflection, refraction and polarization, finite reflecting surfaces in terms of Fresnel zones and irregular surfaces in term of Rayleigh's criterion.

The major effect that the terrain has on waves is diffraction by the earth's curvature, which is discussed in terms of wavelength and station heights and by conclusions drawn concerning the ground wave. The book also considers the effect of obstacles such as radar targets and tall buildings.

In discussing the troposphere (in terms of refraction and absorption of waves) specific problems such as fading over links that are in direct line of sight and propagation over abnormally long trajectories are taken up. The very important topic of the ionosphere is opened by a delineation of methods of studying the ionosphere and followed by a description of the layered constitution of the ionosphere and its "normal" variations, including a short section on the magnetosphere and interplanetary space. The chapter ends with a discussion of perturbations of the ionosphere, which includes solar activity, atomic explosions and eclipses.

The chapter on interference categorizes noise as internal and external to