I think this book succeeds in providing the novice a broad and enticing introduction to the subject of network optimization.

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25[42–01, 42A38, 65T10].—JAMES S. WALKER, *Fast Fourier Transforms*, Studies in Advanced Mathematics, CRC Press, Boca Raton, FL, 1991, xiv + 319 pp., 24 cm. Price $59.95.

This is another addition to the growing textbook literature on the FFT, and the emphasis here is on the interplay between the FFT and classical Fourier analysis and on applications of the FFT to the practice of Fourier analysis. A very attractive feature of this book is the inclusion of computer software, called *Fourier Analysis Software*, in the form of a disk that can be used on any PC operating under DOS version 2.1 and up. With this software the reader can generate computer images of Fourier series, Fourier transforms, filtered Fourier transforms, and convolutions.

After giving a brief summary of the basic theory of Fourier series in Chapter 1, the author introduces the discrete Fourier transform, together with discretizations of Fourier sine and Fourier cosine series, in Chapter 2. Chapter 3 presents the heart of the matter, the fast Fourier transform, but it concentrates on Buneman's methods, which, in the author's opinion, deserve more prominence. The topic of Chapter 4 is applications of Fourier series, for instance to the heat and wave equations, to Schrödinger's equation for a free particle, and to filters in signal processing. Chapter 5 discusses the fundamentals of Fourier transforms, Fourier inversion, and convolution and covers also Poisson summation, the sampling theorem, and aliasing. An introduction to Fourier optics is given in Chapter 6. Appendix A contains the user's manual for *Fourier Analysis Software* and Appendix B lists some computer programs written in the language QuickBASIC.

The book is well paced for students of applied areas such as electrical engineering and physics, and this is mainly the audience the author had in mind, since mathematical technicalities are kept to a minimum.

H. N.