as J. H. Laning, Jr. & R. H. Battin, *Random Process in Automatic Control*, McGraw-Hill, 1956. The merit of the book lies mainly in Chapters 5 and 6, Optimum Systems and Applications in Optimal Systems, where such things as determination of the optimum impulse response and the optimum system block diagram are discussed with the usual mean-square error criterion. Applications are taken from problems in fire control, tracking, prediction, guidance, and navigation. Publications by M. Shinbrot are referred to quite often.

In these chapters, analysis and synthesis processes of control systems are illustrated from a very rough, sketchy beginning to a more and more precise determination of various system parameters. The book occupies a middle position in the spectrum of technical books, in that it is not recommended for beginners and yet it is not very useful for people actually working in this area. However, students in control systems can benefit from such step-by-step explanations of synthesis processes.

On the whole, the reviewer feels that the book has not come up to the expectation raised in the reader's mind when he looks at the chapter headings.

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9 [L].—V. S. AIZENSHTAT, V. I. KRYLOV & A. S. METLESKII, *Tables for Calculating Laplace Transforms and Integrals of the form* $\int_0^\infty x^s e^x f(x)\,dx$, Izdatel'stov Akad. Nauk SSSR, Minsk, 1962, 378 p. (Russian).

This book gives tables of Gaussian quadrature formulas for approximate evaluation of the integrals in the title. These formulas have the form

$$\int_0^\infty x^s e^{-x} f(x)\,dx = \sum_{k=1}^{n} A_k f(x_k)$$

where the A_k and x_k depend on the parameter s and the value of n. The A_k and x_k are chosen so that the approximation is exact whenever $f(x)$ is a polynomial of degree $\leqq 2n - 1$. This means that the x_k are the zeros of the nth degree generalized Laguerre polynomial $L_n^{(s)}(x)$, which satisfies the orthogonality condition

$$\int_0^\infty x_r^{s-x} L_n^{(s)}(x) P(x)\,dx = 0,$$

where $P(x)$ is an arbitrary polynomial of degree $\leqq n - 1$.

The first 22 pages of the book discuss properties of these formulas and give some examples of their use. The remainder of the book contains the formulas and is divided into three tables. Table 1 gives formulas for $s = -0.90(0.02)0.00$; Table 2, formulas for $s = 0.55(0.05)3.00$; and Table 3, formulas for $s = -\frac{3}{4}, -\frac{1}{4}, n + \frac{k}{3}$, where $n = -1(1)2$, $k = 1, 2$. For each value of s, the numbers A_k, x_k, and $A_k e^{x_k}$ are given to 8 significant figures for $n = 1(1)15$.

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