$n + 1$ terms, each of which depends on a different value of $h(p)$. Notice that this procedure yields a continuous-type approximation as opposed to the discrete-type approximation described by [2]–[9]. Attention should also be called to papers by Tricomi [4], who got a continuous-type approximation based on Laguerre polynomials.

In the above approaches, the problem is viewed as that of solving an integral equation. As the inverse Laplace transform has an integral representation, it is natural to seek the inverse transform by a direct quadrature. Examples of this approach are given in three papers by Salzer [5], [6], [7].

Finally, we note a valuable technique which is slightly touched upon by the authors. However, no references to the literature are given. The idea is to approximate $h(p)$ by the ratio of two polynomials and then invert this approximation in the usual fashion. Only a few examples of this approach are known; see the papers by Luke [8]–[10] and a paper by Fair [11]. In each instance the accuracy of the results is quite remarkable. Furthermore, the approximation for $f(t)$ is a sum of exponentials. This is especially valuable in numerous problems where integrals and other expressions involving $f(t)$ are required.

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7 [2.35, 4, 5, 6, 13.15].—Yu. V. Vorobyev, *Method of Moments in Applied Mathematics*, translated from Russian by B. Seckler, Gordon and Breach Science Publishers, New York, 1965, x + 165 pp., 23 cm. Price $12.50.

This monograph presents a study with applications of the method of moments for the approximate solution of functional equations in Hilbert spaces involving (mostly completely continuous and self-adjoint bounded) linear operators. The method is based on a variational principle and is closely related to the Chebyshev-Markov classical problem of moments. The representation of the approximate operators constructed in the method of moments shows that the author's method falls within the general framework of the projection or the abstract Ritz-Galerkin method. It differs merely in the choice of the projections, that is, the method of moments gives a specific and very often a useful way of determining the coordinate elements used in the approximations which are closely connected with the problem being studied and which can also be used in accelerating the convergence of iterative methods of Picard-Neumann-Banach type.

The book consists of seven chapters in which the theory and the application of the method of moments is investigated. In Chapter I, "Approximation of bounded linear operators," the author introduces the concepts of an abstract Hilbert space, bounded linear operators, discusses without proofs their properties, formulates the method of moments in a Hilbert space and shows its relation to the projection method or the abstract Ritz-Galerkin method. In Chapter II, "Equations with completely continuous operators," the method of moments is first formulated for completely continuous operators and then it is applied to the solution of nonhomogeneous equations with completely continuous linear operators and to the determination of their eigenvalues. It is also shown how the method of moments can be used in the acceleration of convergence of iterative methods of Picard-Neumann-Banach type. In Chapter III, "The method of moments for self-adjoint operators," the problem of moments is first formulated for equations involving self-adjoint operators and then the method is applied to the determination of the spectrum of a self-adjoint operator and to the solution of nonhomogeneous linear equations involving bounded self-adjoint operators. In Chapter IV, "Speeding up the convergence of linear iterative processes," the author first discusses the linear iterative processes, $x_{n+1} = Ax_n + f$, and various methods for their acceleration in the solution of the equation $x = Ax + f$ and then shows how the method of moments may be used to speed up the convergence of the above linear iterative processes. He applies this technique to the solution of the finite-difference equations arising in the numerical solution of the first boundary-value problem for an elliptic operator with constant coefficients. In Chapter V, "Solution of time-dependent problems by the method of moments," the author applies the method of moments to the solution of various classes of nonstationary linear problems (e.g., oscillatory systems with a finite number of degrees of freedom, heat conduction in an inhomogeneous rod, the transient in an automatic control system, etc.). In Chapter VI, "Generalization of the method of moments," it is shown that the author's method is applicable to certain classes of linear equations involving unbounded operators. In Chapter VII, "Solution of integral and differential equations," the method of moments is applied to the solution of certain classes of linear integral equations in L_2 spaces and boundary-value problems for ordinary and partial differential equations. The numerical results obtained by the method of moments are illustrated by actually solving approximately the problems associated with bending of a beam of variable cross-section and with the field of an electrostatic electron lens.

Finally, it should be noted that the monograph is clearly written and well motivated. Its English translation is quite satisfactory.

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8 [2.55].—Ramon E. Moore, *Interval Analysis*, Prentice-Hall, Englewood Cliffs, N. J., 1966, xi + 145 pp. Price $9.00.