simply the potential of the total field created by internal charges and counter charges induced on the grounded conductors bounding the domain. It is quite surprising that the underlying, though ubiquitous, concept of (electric) induction is not even mentioned; the more so as the authors consider that "the physical interpretation (of the contact problem of elasticity, see p. 247) readily explains many of the theorems in this monograph, and is a useful device for making reasonable guesses on the behavior of weighted potentials."

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H. N. Mhaskar, *Introduction to the Theory of Weighted Polynomial Approximation*, Series in Approximations and Decompositions **7**, World Scientific, Singapore, 1996, xiv + 379 pp.

The theory of approximation of functions by trigonometric and algebraic polynomials provides a role model for the study of other approximation processes, such as splines, rational functions, and wavelets. The main theme of this excellently written monograph is the approximation of functions on the whole real line by algebraic polynomials. At least for 40 years, many people worked on the classical Bernstein approximation problem which seeks conditions on the weight w such that the set of functions $\{w(x)\,x^k\}_{k=0}^{\infty}$ is fundamental in the class of continuous functions on the real line, vanishing at infinity. In the 1970s Géza Freud started to develop a rich theory for weighted polynomial approximation, first for the weight $w(x) = \exp(-x^2/2)$, later for general weights. Since then, many people have contributed deep results using a variety of different techniques and ideas. There are other excellent books which describe adequately these achievements, mainly from the perspective of the potential theory or orthogonal polynomials. But the main thrust of this book is to introduce the subject from an approximation theory point of view. Therefore the author first treats the basic topics of approximation on a bounded interval, such as interpolation and quadrature in Chapter 1, Favard-type estimates, K-functional, degree of approximation in Chapter 2. Later, one of the main motivations is to study analogs for the weighted polynomial approximation on the real line.

Chapter 3 develops many technical estimates regarding the "Freud polynomials." In Chapter 4, the direct and converse theorems for the degree of weighted approximation on the real axis,

$$E_{p,n}(w; f) := \inf\{\|w(f-P)\|_p,\ P \in \Pi_n\}$$

are derived in terms of suitably defined K-functionals. Various expressions for these K-functionals are given in Chapter 5. Chapter 6, one of the central chapters, is devoted to the question where the supremum norm and the L_p-norms of weighted polynomials wP, $P \in \Pi_n$, live.

Chapter 7 deals with the problem of approximation of entire functions, while Chapter 8 contains further technical results regarding Freud polynomials. In Chapter 9, these results are applied to the study of orthogonal polynomial expansions, polynomials of Lagrange interpolation, and quadrature processes. The closure of certain weighted polynomials and the asymptotic behavior of the leading coefficients of the Freud polynomials are studied in Chapter 10. The last chapter, Chapter 11, contains the theory of weighted polynomials of the form $w^n P$, $P \in \Pi_n$, of the incomplete polynomials, and applications in the theory of neural networks and wavelets. The book concludes with a short appendix about theorems from functional analysis, potential theory, the theory of Fourier series, approximation theory and the Bernstein approximation problem on the real line.

No references are given in the main text, but the historical notes for each chapter and the credits are collected in the notes following the appendix.

I have enjoyed reading this monograph, and I recommend it for all students and scholars interested in analysis and approximation theory.

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R. A. Lorentz, Ed., *George G. Lorentz: Mathematics from Leningrad to Austin*, Selected Works in Real, Functional and Numerical Analysis, Vols. 1 and 2, Contemporary Mathematicians, Birkhäuser, Boston, 1997; Vol. 1: xxxvi + 548 pp.; Vol. 2: xxviii + 648 pp.

Very few mathematicians get the privilege of having their selected works edited by their son who is also a mathematician on his own right. And very few mathematicians have the honor of having a father whose mathematical life spans more than 60 years and at least five broad areas and whose impact on present day mathematics will be felt many years from now. These two volumes contain about two thirds of the papers that George G. Lorentz wrote from 1932, at that time an assistant professor in Leningrad, until 1994, when he was a Professor Emeritus at the University of Texas at Austin. The first volume contains papers in summability theory, number theory and interpolation, while the second one is dedicated to real and functional analysis, and approximation theory. But there is much more in these books. First of all, the first volume contains a touching introduction by George's son Rudi, from which we can learn George's life story in