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BOOK's Report:
***H*-TRANSFORMS. THEORY AND APPLICATIONS**

By Anatolii A. Kilbas and Megumi Saigo

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The monograph deals with a unified approach to integral transforms involving the H -functions as kernels, and their applications.

The H -function of Fox generalizes most of the known special functions. Thus, almost all integral transforms can be put into the form of H -transforms. There are special cases of H -transforms as the G -transforms with the Meijer G -function as kernel, and there are also transforms that cannot be reduced to a G -transform but can be put into the form of H -transforms (the modified Hankel transform, the Erdélyi-Kober type fractional integration operators, the modified transforms with Gauss hypergeometric function, the Mittag-Leffler type integral transforms and others).

The subject of this book is contemporary and important. The interest in integral transforms with special functions in kernels is motivated by their

wide use in solution of various problems of mathematical physics and applied mathematics.

The authors' investigations are based on the method of Mellin multipliers and on the asymptotic expansions of the H -function at zero and infinity.

The authors construct the $\mathcal{L}_{\nu,r}$ - theory of the H -transforms and integral transforms with special functions. They establish the properties, the representations, and the range of the H -transforms and prove their inversion formulas.

The monograph consists of 8 chapters. A distinctive historical survey and formulations of the results closely related to the subject matter, complete every chapter.

The first 2 chapters contain results from the theory of the H - function.

Chapters 3-5 present the $\mathcal{L}_{\nu,r}$ - theory of integral transforms with H -function kernels.

Chapters 6-8 contain the results from $\mathcal{L}_{\nu,r}$ - theory of integral transforms with special function kernels (modified G - transforms, hypergeometric type integral transforms, Stieltjes type transforms, transforms with Whittaker, parabolic cylinder, Wright function, Neumann, Struve, Macdonald, Lommel-Maitland functions and others).

The main results in the book are given with complete proofs. Of particular interest are the new results on the theory of H - transform given in Chapters 5-7.

The bibliography consists of 578 entries, published up to year 2002. This very comprehensive list of references and bibliographical notes certainly invokes the urge for further exploration.

The book is well written and contains many excellent investments, great set of illuminating and searching problems. It will be invaluable research tool, and a wonderful textbook for anyone wishing to get a handle on the area of the integral transforms.

This book is suited not only for mathematicians but for scientists and engineers as well.

We can congratulate the authors with this successful, brilliant, useful book!

Prof. Nina A. Virchenko

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