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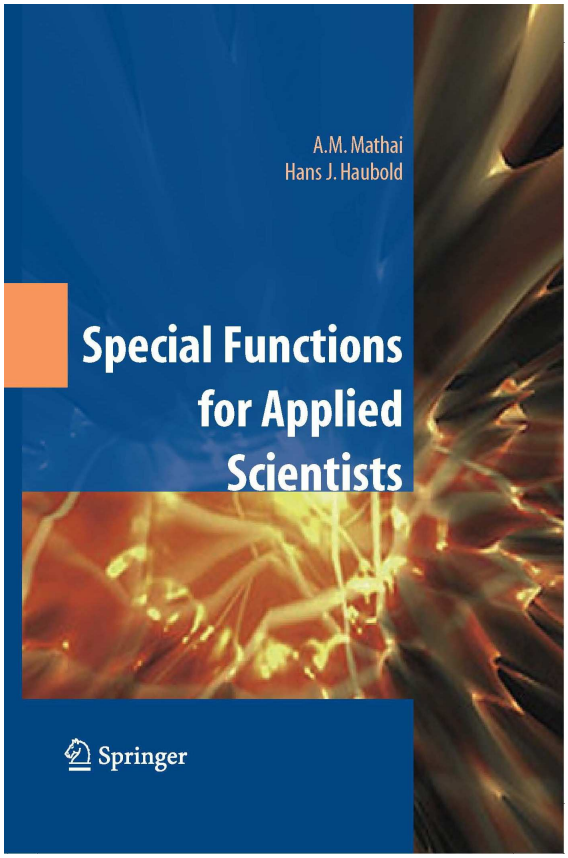
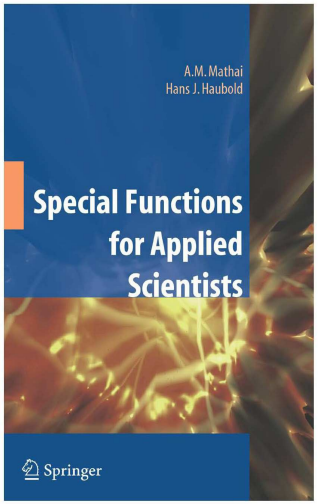
BOOK's Announce:

"Special Functions for Applied Scientists"

By A.M. Mathai, H.J. Haubold





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A.M. Mathai, McGill University, Montreal, QC, Canada; H.J. Haubold, Office for Outer Sp
UN, Vienna, Austria

Special Functions for Applied Scientists

Chapter 1 introduces elementary classical special functions. Gamma, beta, ps
tions, hypergeometric functions and the associated special functions, generali
to Meijer's G and Fox's H-functions are examined here. Discussion is confine
properties and selected applications. Introduction to statistical distribution th
vided. Some recent extensions of Dirichlet integrals and Dirichlet densities ar
A glimpse into multivariable special functions such as Appell's functions and
functions is part of Chapter 1. Special functions as solutions of differential eq
examined. Chapter 2 is devoted to fractional calculus. Fractional integrals and
derivatives are discussed. Their applications to reaction-diffusion problems in
input-output analysis, and Mittag-Leffler stochastic processes are developed.
deals with q-hyper-geometric or basic hypergeometric functions. Chapter 4 c
hypergeometric functions and Ramanujan's work on elliptic and theta functio
ter 5 examines the topic of special functions and Lie groups. Chapters 6 to 9 a
to applications of special functions. Applications to stochastic processes, geor
nite... *more on* *http://springer.com/978-0-387-75893-0*

► Provides the required mathematical tools for researchers active in the physi
ences ► Presents a full suit of elementary functions for scholars at PhD level

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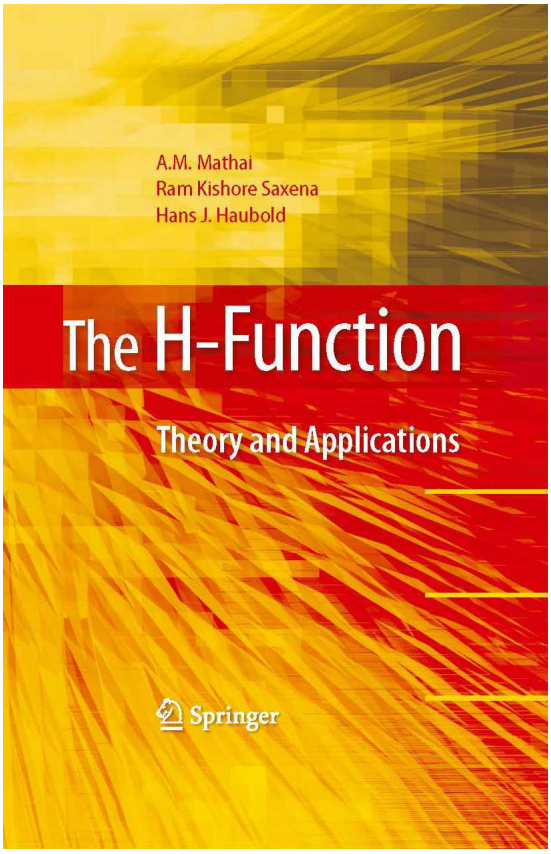
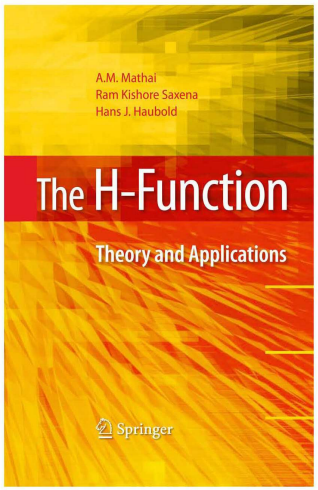
BOOK's Announce:

"The H-Function"

By A.M. Mathai, R.K. Saxena, H.J. Haubold





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Jodhpur, Rajasthan, India; H.J. Haubold, United Nations, Vienna, Austria

The H-Function

Theory and Applications

The two main topics emphasized in this book, special functions and fraction
culus, are currently under fast development in theory and application to ma
lems in statistics, physics, and engineering, particularly in condensed matter
plasma physics, and astrophysics. The book begins by setting forth definitio
tours, existence conditions, and particular cases of the H-function. The auth
with Laplace, Fourier, Hankel, and other transforms. As these relations are e
fractional calculus and its relations to H-functions emerge with important r
fractional differentiation and fractional integral operators. The latter chapte
applications of H-functions in statistical distribution theory, structures of ra
ables, generalized distributions, Mathai's pathway models, and versatile inte
authors also present an introduction to functions of matrix argument, with
on the space of Hermitian positive matrices. The book concludes with the m
applications of H-functions and fractional calculus to physical problems in
fusion, reaction-diffusion theory, statistics, superstatistics, and generalized e
more on http://springer.com/978-1-4419-0915-2