

## Control and Cybernetics

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### Book review:

#### A HANDBOOK OF REAL VARIABLES

by

**Steven G. Krantz**

The book is a well-written and concise review of the major results, techniques and applications of real analysis. The aim of the book is to give the reader an easy and quick access to all of the key facts, concepts and methods of real analysis without becoming bogged down in long explanations and proofs.

As the list of the chapter headings indicates, the book contains the topics of real analysis, which are systematically developed, beginning with the operations on sets and functions, the convergence of sequences and series of numbers, the topology of real line, limits and the continuity of functions. Moreover the concepts, properties and applications of the derivatives of functions as well as Riemann integrals of real functions are recalled. In the second part of the book, sequences and series of functions and their convergence, Weierstrass Approximation Theorem, Taylor series, Sterling's Formula, as well as Fourier series are carefully discussed. The more advanced topics include metric spaces, the Baire Category Theorem, and the Ascoli - Arzela Theorem. Picard iteration and differential equations are treated in the final chapter. For the sake of the reader's convenience the Glossary of Terms from the Real Variable Theory and the Guide to the Literature are provided.

The treatment of each topic is self-contained, cogent and clear-cut. Proofs and axiomatic language are generally omitted. An ample number of examples are provided to illustrate the application of the discussed topics. References for further reading are provided.

Engineers, economists, physicists and other applied scientists constitute the book's primary intended audience.

Andrzej Myśliński

Steven G. Krantz <i>A Handbook of Real Variables. With Applications to Differential Equations and Fourier Analysis.</i> Birkhäuser Verlag, Basel-Berlin-Boston, 213 pages, 2003. ISBN 0-8176-4329-X. Price (net): EUR 58.00 (hardcover)
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