

Wavelets have been a topic of extensive research in the past ten years, in particular in applied mathematics and signal processing. The field is quite mature now, and this maturity has given rise to the publishing of many books, with different coverages of the theory and of its applications. Whereas wavelets can be approached from many different perspectives (time-frequency analysis, approximation theory, filterbanks, ...), the book under review puts a major emphasis on the filter structures attached to wavelets, which are the key for their algorithmic efficiency and which have made possible their major achievements in applications such as data compression.

It is clear that this is not just one more book on wavelets. It really provides the reader with a comprehensive treatment of the subject; it is rigorous and easy to read, nicely illustrated and presented in an efficient, highly pedagogical style. It can serve both as one of the best possible introductions to the subject for newcomers and as a reference text for more advanced practitioners. Although devoted to a brief exposition of important applications which have been actually and successfully developed. Moreover, the book also serves as a theoretical basis for the “wavelet toolbox” licensed by The MathWorks Inc., and an entire chapter consists of Matlab exercises, supplementing in a very efficient way the many standard exercises which are proposed throughout the text.