gen. Vorausgesetzt werden vom Leser nur solide Vorkenntnisse über Funktionen einer komplexen Variablen. Den feinen und vielfältigen und diffizilen Methoden (z.B. ergeben sich mehrwertige Funktionen und Verzweigungsprobleme auf natürliche Weise) angemessen, wird hier eine Fülle von instruktiven Beispielen von ansteigender Komplexität geboten. Allgemein bedeutsame theoretische Überlegungen werden hier auch sehr gut vermittelt, ihre Dominanz (wie heute in vielen anderen Gebieten üblich) aber, als der komplexen Problemfülle inadäquat, vermieden. Nützliche Bemerkungen, Diagramme und Tabellen ermöglichen ein schrittweise tieferes Verständnis. Numerische Beispiele bei interessanten Anwendungen helfen dem Leser den erreichbaren Genauigkeitslevel zu verstehen und die hohe Qualität der Methoden adäquat zu würdigen. Ein in vielschichtiger Hinsicht beeindruckendes Buch mit der meisterlichen Handschrift eines auch vorzüglichen Forschers.

H. Rindler, Wien

Melnikov, Y. A.: *Green's Functions and Infinite Products—Bridging the Divide.* X, 165 pp. Birkhäuser, New York, 2011. EUR. 53,45.

The present book provides an introduction to some recent research of the author based on a method for deriving infinite product representations for the Green's functions of the two-dimensional Laplace equation on certain domains. Comparison with the known closed expressions yields an alternate approach to obtain infinite product representations for elementary functions. It should however be mentioned, that the *new* product representation for the sine function derived in this way is nothing but the classical Euler formula multiplied with the Wallis product for $\pi/2$. The book contains ample background material on infinite products and Green's functions (for the Laplace equation in one and two dimensions) and is, hence, accessible for graduate students. In particular, the presentation is clear and self-contained.

G. Teschl, Wien

Heil, Ch.: *A Basis Theory Primer.* (Applied and Numerical Harmonic Analysis) Expanded Edition. XXV, 534 pp., Birkhäuser, New York Dordrecht Heidelberg, 2011 Euro 71,45.

Newcomers to the field of Gabor or wavelet analysis are confronted with the need of a solid background in functional analysis. The enormous standard reference for bases in Banach spaces by Ivan Singer is far too comprehensive, while Ole Christensen's excellent book is concentrating on frames and Riesz bases in Hilbert spaces. In contrast the present book gives a wide perspective, preparing the functional analytic ground (in the appendix even all the technical details required for Lebesgue integrals and Hilbert Schmidt operators are presented), and also discussing in great detail the relevant features of bases in Banach spaces, unconditional bases, frames, and their role in the context of Applied Harmonic Analysis. The reader learns about the Fourier transform on $\mathbb{R}$, sampling theory for band-limited functions, the theory of Gabor frames and the role of the Zak transform and Wiener amalgam spaces, as well as wavelet frame

theory. Part IV is recalling results from the classical theory of Fourier series from this viewpoint, including the result of almost everywhere convergence for conjugate Fourier series. Multi-dimensional theory or Banach frames might have been useful add-ons. Overall, the book is ideally suited for self-study, but also as a text book from which different courses can be compiled. The presentation is very reader-friendly and provides all necessary details.

H. G. FEICHTINGER, WIEN

Lang, R. J.: Origami design secrets (2nd Ed.). XI, 758 pp., Peters CRC Press, Boca Raton London New York, 2012 £38,99.

With Origami one can design and produce very many different things. The author has experiences in Origami since over 40 years he developed many new things. His approach to design evolved over the years from simply playing around with the paper, through somewhat more directed playing, to systematic folding. There are codified mathematical and geometric techniques for developing a desired structure and this book is a collection of those techniques but mathematics does not play a major role in this book. There are chapters for the basic notation (symbols and terms) of Origami, chapters of how to produce "traditional bases" for several types of Origami figures, also so called "molecules" and very many folding instructions for in most cases pretty sophisticated things to fold (*elephants*, *turtles*, *emus*, *scarabbeetles* ...). The figures in the book are very clear and the descriptions are very precise, nevertheless one surely needs a lot of practice to successfully fold all the animals and the like.

H. HUMENBERGER, WIEN