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Sommario/riassunto	<p>Today, more sophisticated techniques are necessary for spectral analysis, reconstruction, restoration of signals, their digital and analogic processing, specialized signal diagnostics, and short intervals with occurrences that require greater speed and precision. As the frequency domain of the wavelet transform gets more detailed and considerably more specific in various applications, it necessitates specialized scholarly attention in its many forms and relationships with other transforms with special functions. For example, using the wavelet transform with special functions can prove valuable in creating and designing special signal filters or the interphase between reception-emission devices with specialized sensors for medical use. In quantum phenomena, its corresponding version of the wavelet transform is instrumental in the spectral study of particles and their correlation. Therefore, using specialists' and experts' views, this book delves into an exposition on spectral analysis, restoring, monitoring, and signal processing, as well as essential applications required in waveguides and for the improvement of medical images, proving the wavelet transform to be helpful in resolution analysis in time-frequency, with an emphasis on different methods of the calculus using FFT and DSTFT. This book has been divided into four sections covering all the abovementioned subjects.</p>

