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2.2.2.7. The sum theorem; 2.2.2.8. The final-value theorem; 2.2.2.9. Complex conjugation; 2.2.2.10. Parseval's theorem; 2.2.3. Table of standard transform; 2.3. The inverse z-transform
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2.6.2.2. Jury's criterionChapter 3. Frequential Characterization of Signals and Filters; 3.1. Introduction; 3.2. The Fourier transform of continuous signals; 3.2.1. Summary of the Fourier series decomposition of continuous signals; 3.2.1.1. Decomposition of finite energy signals using an orthonormal base; 3.2.1.2. Fourier series development of periodic signals; 3.2.2. Fourier transforms and continuous signals; 3.2.2.1. Representations; 3.2.2.2. Properties; 3.2.2.3. The duality theorem; 3.2.2.4. The quick method of calculating the Fourier transform; 3.2.2.5. The Wiener-Khintchine theorem
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3.5. The fast Fourier transform for a time/frequency/energy representation of a non-stationary signal

Sommario/riassunto

Dealing with digital filtering methods for 1-D and 2-D signals, this book provides the theoretical background in signal processing, covering topics such as the z-transform, Shannon sampling theorem and fast Fourier transform. An entire chapter is devoted to the design of time-continuous filters which provides a useful preliminary step for analog-to-digital filter conversion.Attention is also given to the main methods of designing finite impulse response (FIR) and infinite impulse response (IIR) filters. Bi-dimensional digital filtering (image filtering) is investigated and a study on stabi