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Autore	Butz Tilman
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Descrizione fisica	1 online resource (XVIII, 242 p. 148 illus.)
Collana	Undergraduate Lecture Notes in Physics, , 2192-4791
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Soggetti	Physics Signal processing Image processing Speech processing systems Mathematical physics Mathematical Methods in Physics Signal, Image and Speech Processing Mathematical Applications in the Physical Sciences
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Fourier Series -- Continuous Fourier Transformation -- Window Functions -- Discrete Fourier Transformation -- Filter Effect in Digital Data Processing -- Data Streams and Fractional Delay -- Tomography: Back projection of Filtered Projections.
Sommario/riassunto	This book is an introduction to Fourier Transformation with a focus on signal analysis, based on the first edition. It is well suited for undergraduate students in physics, mathematics, electronic engineering as well as for scientists in research and development. It gives illustrations and recommendations when using existing Fourier programs and thus helps to avoid frustrations. Moreover, it is entertaining and you will learn a lot unconsciously. Fourier series as well as continuous and discrete Fourier transformation are discussed with particular emphasis on window functions. Filter effects of digital data processing are illustrated. Two new chapters are devoted to modern applications. The first deals with data streams and fractional delays and the second with the back-projection of filtered projections

in tomography. There are many figures and mostly easy to solve exercises with solutions.