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Nota di contenuto	Part I: Cascaded interferometers -- Chapter 1: Modulated two-beam interference using Fourier optics -- Chapter 2: A Cascaded Michelson interferometer and its application on glass fibers -- Chapter 3: Step index fiber using multiple laser beam interferometer -- Chapter 4: Modeling of the fringe shift for unclad glass fibers using ordinary multiple-beam interference -- Chapter 5: Recognition of some modulated apertures using Cascaded Fabry-Perot Interferometer (CFPI) -- Part II: Application of medical images using cascaded interferometers -- Chapter 6: Processing of the retinal artery image using higher orders of two-beam interference -- Chapter 7:

Investigation of kidney images using Cascaded Fabry-Perot Interferometer (CFPI) -- Chapter 8: Image Processing of Corona Virus Using Interferometry -- Chapter 9: Investigation of the colon using cascaded interferometric techniques.

Sommario/riassunto

This book looks at the application of cascaded interferometers in both theoretical and practical contexts, particularly focusing on enhancing image contrast and facilitating medical diagnostics. Commencing with a comprehensive exploration of modulated two-beam interference employing Fourier optics, it progresses to discuss the implementation of a cascaded Michelson interferometer, with a specialized emphasis on its utility in analyzing microscopic structures such as glass fibers. Subsequent chapters examine step-index fibers using multiple laser beam interferometry and introduce sophisticated models for interpreting fringe shifts in unclad glass fibers through ordinary multiple-beam interference. Moreover, the book addresses the recognition of modulated apertures employing a Cascaded Fabry-Perot Interferometer (CFPI) and discusses its implications for various applications. It looks at the processing of retinal artery images leveraging higher orders of two-beam interference and investigates the utility of cascaded interferometric techniques in examining kidney and colon images. Furthermore, it presents a novel approach to image processing of coronaviruses utilizing interferometry techniques, showcasing the potential of interferometric methods in medical research and diagnostics. Through its systematic exploration of cascaded interferometers and their diverse applications, this book is suited for researchers, practitioners, and students alike, offering insights into both fundamental principles and advanced methodologies in interferometry and medical imaging.