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Soggetti	Microscopy Geometrical optics Wave theory of light Materials - Analysis Imaging systems Imaging systems in biology Image processing Optical Microscopy Classical Optics, Geometric and Wave optics Imaging Techniques Biological Imaging Image Processing
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Nota di contenuto	1 Recognition of the direction of new apertures from the elongated speckle images -- 2 Speckle images using Gaussian and graded-index apertures -- 3 The contrast of speckle images using Voigt distribution -- 4 Contrast of speckle images using modulated apertures -- 5 Speckle images modulated by a new Hamming-linear aperture -- 6 Discrimination between microscopic images using digital speckle images -- 7 Speckle images using concentric black and white hexagonal pupils -- 8 Irregular apertures -- 9 Speckle Imaging of annular Hermite Gaussian laser beam.
Sommario/riassunto	This book covers speckle image formation using a variety of modulated apertures. The central theme revolves around theoretical analyses, specifically the calculation of impulse responses or Point Spread

Functions (PSFs) corresponding to these apertures. These calculations provide crucial insights into the resolution inherent in the resulting speckle images. The book begins with an examination of the recognition of the direction of new apertures from elongated speckle images, setting the stage for subsequent discussions. The theoretical analyses extend to diverse aperture designs, including Gaussian, graded-index, and modulated apertures. The book delves into the nuanced dynamics of contrast in speckle images, exploring the Voigt distribution and the effects of modulation on contrast. In addition to aperture-centric discussions, the book addresses the processing of the formed speckle images. The chapters impart a comprehensive understanding of speckle imaging, encompassing discrimination in microscopy using digital speckle images, the utilization of concentric hexagonal pupils, and the exploration of irregular apertures. The book culminates in a detailed exploration of speckle imaging in the context of an annular Hermite Gaussian laser beam. Overall, this book serves as a valuable resource for researchers and academics seeking a profound exploration of speckle image formation, modulation, and processing across a spectrum of apertures and theoretical frameworks.
