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Sommario/riassunto

This book highlights the effectiveness of differential diagnosis in the degree of severity of joint pathology from a clinical, biophysical, and informational point of view. It includes the following information blocks: • Two-dimensional digital polarization microscopy of polycrystalline films of synovial fluid and determination of the

coordinate distributions of the orientation and phase parameters of the microscopic image from a set of parameters of the Stokes vector. • Mueller-matrix mapping of polycrystalline films of synovial fluid and determination of a set of coordinate distributions (Mueller-matrix images (MMI)) of azimuthal-invariant elements that characterize manifestations of optical activity and linear birefringence. • Development of algorithms for polarization reproduction of distributions of linear and circular birefringence of polycrystalline films of synovial fluid. • Identification of digital statistical, correlation and wavelet criteria of polarization and Mueller-matrix differential diagnosis of the degree of severity of joint pathology. • Determination of maps of laser-induced fluorescence of synovial fluid polycrystalline films. • Identification of statistical and correlational criteria for fluorescent differential diagnosis of the degree of severity of joint pathology. • Operational characteristics of the power of the methods of azimuth-invariant polarization, Mueller-matrix and laser autofluorescence microscopy of polycrystalline films of synovial fluid.
