**Features of the local polarization structure of gene-based speckle patterns**

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A method for speckle-polarization imaging of DNA nucleotide sequences of various biological objects is considered. The method is based on synthesis of a sequence-associated multi-element phase retarding structure and analysis of distributions of the local components of the Stokes vector in the diffraction pattern. This speckle-modulated pattern is formed due to reading out the synthesized phase retarder by a collimated coherent beam. Examples of application of the considered technique to various gene structures are presented.

*Keywords*: nucleotide sequences, nucleotide triplets, gene, phase screen, diffraction, local polarization, binary distributions.

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