Mathematical Reconstruction of an Object Image Using X-Ray Interferometric Fourier Holography Method

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Abstract : The main principles of X-ray Fourier interferometric holography method are discussed. The object image is reconstructed by the mathematical method of Fourier transformation. The three methods are presented – method of approximation, iteration method and step by step method. As an example the complex amplitude transmission coefficient reconstruction of a beryllium wire is considered. The results reconstructed by three presented methods are compared. The best results are obtained by means of step by step method.
Keywords : dynamical diffraction, hologram, object image, X-ray holography