## Time response of a thin dynamic hologram in a dye solution simulated by a four-energy-level diagram

E.V. Vorobeva<sup>1</sup>, V.V. Ivakhnik<sup>1</sup>
Samara State Aerospace University

## Abstract

The equation for time response function as a sum of three exponential functions have been obtained for thin dynamic hologram in a solution of dye, simulated by a four-level energetic scheme. The authors have derived the dependences of weight coefficients and reduction velocities of exponential functions on the intensity of the hologram write radiation.

<u>Keywords</u>: dynamic hologram, four-energy-level, weight coefficient, reduction velocitie, exponential function.

<u>Citation</u>: Vorobeva EV, Ivakhnik VV. Time response of a thin dynamic hologram in a dye solution simulated by a four-energy-level diagram. Computer Optics 2002; 24: 91-93.

## Access full text (in Russian)

## References

- [1] Papoulis A. Systems and transforms with applications in optic. McGraw-Hill Book Company; 1968.
- [2] Vasilev LA, Galushkin MG, Seregin AM, Cheburkin NV. Wavefront reversal in four-wave interaction in a medium with a thermal nonlinearity. Soviet Journal of Quantum Electronics 1982; 12(8):1007-1009.
- [3] Garashchuk VP, Ivakhnik VV, Nikonov VI. Temperature dependence of the diffraction efficiency of a dynamic hologram in a reversible photochromic medium. Optics and Spectroscopy 1998; 85(4): 613-618.
- [4] Tikhonov EA, Shpak MT. Nonlinear optical phenomena in organic compounds [In Russian]. Kyiv: "Naukova Dumka" Publisher; 1979.