

Dynamics of spatial and temporal characteristics of image viewing: model and experiment

Vladislav A. Osinov¹⁾, Dmitry G. Shaposhnikov²⁾,
Tatiana I. Koltunova³⁾, Lubov N. Podladchikova⁴⁾

A.B. Kogan Research Institute for Neurocybernetics, Southern Federal
University (RUSSIA, Rostov-on-Don)

¹⁾vlad_os@list.ru, ²⁾dima@nisms.krinc.ru, ³⁾t.koltunova@gmail.com,
⁴⁾lnp@nisms.krinc.ru

Abstract. The dependence of scanning region area and number of consequent one-degree shifts of modeled input window on its structure and weight coefficient of primary image features (oriented segments) has been revealed by means of computer simulation. An analysis of psychophysical results has shown that spatial and temporal parameters of viewing topology tested during computer simulation accurately reflect both the specificity of the visual task under solution and image properties. An opportunity to use the results obtained for detailed quantitative comparison of the data of psychophysical experiment and computer simulations has been discussed.