Biomedical Engineering 2015

Studying Properties of Abnormal Human Brain Activity in Photosensitive Epilepsy Caused by Light Stimulation

Panischev O., Demin S., Rusanova I.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2015 Springer Science+Business Media New York Fractal features of neuromagnetic activity of the cerebral cortex in photosensitive epilepsy (PSE) before and after exposure to light flickering stimulus were studied. It was found that the dynamics of magnetoencephalographic signals of the PSE patient is characterized by higher values of the fractal index than in the control group. The most significant differences are revealed for the parietal, occipital, frontal, left parietal, and left temporal regions of the brain. Switching the stimulus led to a large-scale reaction of various regions of the cortex in the control group, while the patients showed a localized response.

http://dx.doi.org/10.1007/s10527-015-9537-3