The EEG parametric

We modify OpenBCI- with Oculus CV1

Selected from a standard 10–20 system

Early researchers propose that EEG alpha (8-13Hz) band power and its variance, include upper-alpha wave (Zoefel, Huster et al. 2011) and individual alpha frequency (Klimesch, 1999), could be used as the indicator for p

Previous study propose that Alpha (8-13 Hz) is dominant during flowing thought and meditation.

Higher alpha EEG activity is more associated with relaxed conditions than with states of stress

Investigations of human EEG response to viewing fractal patterns

Interational 10-20 system (Investigations of human EEG), different areas: frontal, parietal, temporal, sensory info is precepted and modified by parietal and temporal regions. While frontal area is more significant to visual stimuli

Benedikt Zoefel, René J. Huster, Christoph S. Herrmann,

Neurofeedback training of the upper alpha frequency band in EEG improves cognitive performance,

NeuroImage,

Volume 54, Issue 2,

2011,

Pages 1427-1431,

ISSN 1053-8119,

Klimesch, W.

EEG alpha and theta oscillations reflect cognitive and memory performance: A review and analysis

(1999) Brain Research Reviews, 29 (2-3), pp. 169-195.

Zoefel, B., et al. (2011). "Neurofeedback training of the upper alpha frequency band in EEG improves cognitive performance." Neuroimage **54**(2): 1427-1431.

In this study, the individually determined upper alpha frequency band in EEG (electroencephalogram) was investigated as a neurofeedback parameter. Fourteen subjects were trained on five sessions within 1 week by means of feedback dependent on the current upper alpha amplitude. On the first and fifth session, cognitive ability was tested by a mental rotation test. As a result, eleven of the fourteen subjects showed significant training success. Individually determined upper alpha was increased independently of other frequency bands. The enhancement of cognitive performance was significantly larger for the neurofeedback group than for a control group who did not receive feedback. Thus, enhanced cognitive control went along with an increased upper alpha amplitude that was found in the neurofeedback group only.