

Artifact suppression and analysis of brain activities with EEG signals

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Electroencephalography is a test to measure the electrical activity of the brain generated by scalp surface after being picked up by metal electrodes and conductive media.

Provided by Neural Regeneration Research

Proper classification of electroencephalography data is the main task in electroencephalography based [brain computer interface](#). Brain-computer interface is a communication system that connects the brain with computer (or other devices) but is not dependent on the normal output of the brain (i.e., peripheral nerve and muscle). Such interface transforms neural activities into signals to establish a new mode of communication which can be used by subjects with severe [motor disabilities](#).

Researchers from Pabna University of Science and Technology (Pabna, Bangladesh) and the University of Tokyo (Tokyo, Japan) used a data adaptive technique for artifact suppression and brain wave extraction from electroencephalography signals to detect regional brain activities. The regional [brain activities](#) were mapped on the basis of the spatial distribution of rhythmic components.

The researchers found that the data adaptive technique is very efficient in artifact suppression and identifying individual motor imagery based on the activities of alpha component. They also found that different regions of the brain are activated in response to different stimuli.

These findings were published in the *Neural Regeneration Research* (Vol. 8, No. 16, 2013).

More information: Rashed-Al-Mahfuz M, Islam MR, Hirose K, Molla MKI. Artifact suppression and analysis of brain activities with electroencephalography signals. *Neural Regen Res.* 2013;8(16):1500-1513.

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