BIOPHYSICALLY ADJUSTED STATE-INFORMED CORTEX STIMULATION (BaSiCs): SHAPING THE FUNCTIONAL ARCHITECTURE OF NEURAL NETWORKS TO IMPROVE HUMAN BRAIN FUNCTION

https://neurodegenerationresearch.eu/survey/biophysically-adjusted-state-informed-cortex-stimulation-basics-shaping-the-functional-architecture-of-neural-networks-to-improve-human-brain-function/

Principal Investigators

Hartwig Siebner

Institution

Hvidovre Hospital

Contact information of lead PI
Country

Denmark

Title of project or programme

BIOPHYSICALLY ADJUSTED STATE-INFORMED CORTEX STIMULATION (BaSiCs): SHAPING THE FUNCTIONAL ARCHITECTURE OF NEURAL NETWORKS TO IMPROVE HUMAN BRAIN FUNCTION

Source of funding information

Novo Nordisk Fonden

Total sum awarded (Euro)

€ 2,012,726

Start date of award

03/12/2014

Total duration of award in years

3.0

The project/programme is most relevant to:

Neurodegenerative disease in general|Parkinson's disease & PD-related disorders

Keywords

Research Abstract

A post-doctoral position is available in the Section for Cognitive Systems at DTU Compute, the Department for Applied Mathematics and Computer Science at DTU, starting Mar 1, 2016, or as soon as possible thereafter. The position is funded by the Novo Nordic Foundation project “BASICS: Bio-physically adjusted State-informed Cortex Stimulation: Shaping the functional architecture of neural networks to improve human brain function”.

Responsibilities and tasks

Non-invasive transcranial brain stimulation (NTBS) methods are used as interventional tools to modify human brain function. While NTBS has shown potential in the treatment of brain diseases such as depression or stroke, substantial inter-individual variation in the therapeutic response is currently the greatest obstacle for a more widespread use. The BASICS approach to reinforce the expression of beneficial brain states and to attenuate the expression of dysfunctional brain states will be probed in healthy individuals, patients with Parkinson’s disease and motor stroke. Optimizing NTBS based on the individual’s instantaneous brain state is highly promising, but also poses challenges on several levels that can only be successfully targeted by advanced machine learning methods. The postdoc will focus on these modeling and adaptive control aspects and will contribute both to theoretical model development, design and implementation of real-time predictive control systems, and analysis of experimental data. The research will be carried out in an interdisciplinary research team located at the Technical University of Denmark and the Danish Research Center for Magnetic Resonance at Hvidovre Hospital.

Lay Summary

Further information available at:

Types:
Investments > €500k

Member States:
Denmark

Diseases:
Neurodegenerative disease in general, Parkinson's disease & PD-related disorders

Years:
2016

Database Categories:
N/A

Database Tags:
N/A