

Spontaneous brain activity in healthy subjects and Parkinson's disease

Initiative: Lichtenberg - Professuren

Bewilligung: 22.06.2016

Laufzeit: 5 Jahre

Projekt-Website: <https://sites.google.com/site/estherflorinneuro/>

The professorship aims at methodological advancements for the analysis of electrophysiological data and at their use to deepen the understanding of healthy and pathological brain function. The research agenda will be based on spontaneous brain activity. Many neurological diseases lead to pathological changes that are already visible during rest. This makes spontaneous activity a promising avenue to better understand the brain's function. The project aims at providing a characterization of the neurophysiological basis of the brain's resting state networks (RSNs) by determining how communication between and within RSNs is mediated. To achieve this goal, time series developments and hypotheses-driven applications of these methods to electro-/magnetoencephalographic data from healthy participants and Parkinson (PD) patients are combined. In the second part of the project the characterization of RSN electrophysiology will be used to improve the understanding of the pathophysiology of PD. A particular focus will be on tracing out the electrophysiological mechanisms underlying the effectiveness of dopamine treatment and deep brain stimulation.

Projektbeteiligte

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Open Access-Publikationen

The comparative performance of DBS artefact rejection methods for MEG recordings

Electrophysiological resting state networks of predominantly akinetic-rigid Parkinson patients:

Effects of dopamine therapy

Spontaneous network activity <35 Hz accounts for variability in stimulus-induced gamma responses

Differential dopaminergic modulation of spontaneous cortico-subthalamic activity in Parkinson s disease,

Neural-event triggered analysis reveals cortical activity time-locked to subthalamic beta bursts

