Universität Basel

Research Project

Entropy and Synchrony Markers for Modeling Cognitive Decline in Patients with Parkinsons Disease

Third-party funded project

Project title Entropy and Synchrony Markers for Modeling Cognitive Decline in Patients with Parkinsons Disease
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Organisation / Research unit
Departement Mathematik und Informatik / Biomedical Data Analysis (Roth)
Department
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Parkinson's disease dementia (PDD) is a complication in the course of Parkinson's disease (PD). The pathophysiological process, however, is not completely understood, and it is of high practical importance to develop new methods for detecting the cognitive decline in PD in a very early state. Recent studies have shown that quantitative EEG (QEEG) measurements are among the most promising methods to predict and monitor cognitive decline. While QEEG is not affected by repetitive examination artifacts, limitations include that the conventional analysis by power spectra doesn't reflect sufficiently the complexity of the underlying neurophysiological process. Therefore, we aim to establish an analytical AI-based tool operating on entropy and synchrony measures to capture more of the complex mechanisms underlying cognitive decline in some patients with PD.

Financed by
Private Sector / Industry

Add publication

Published results

4615458, Keller, Sebastian M.; Gschwandtner, Ute; Meyer, Antonia; Chaturvedi, Menorca; Roth, Volker; Fuhr, Peter, Cognitive decline in Parkinson's disease is associated with reduced complexity of EEG at baseline, 2632-1297, Brain Communications, Publication: JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)

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