INVITATION

Conférence donnée dans le cadre de la procédure d’appel en Neurologie - succ. Annoni

PD Dr. Dr. med. Frédéric ZUBLER
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Vendredi, 11 Mars 2022 à 08h15
Auditoire D130 - PER21, https://www.unifr.ch/map/fr/plans/perolles.html
En présentiel

Quantitative analysis of clinical EEGs

The topic of this presentation is quantitative electroencephalography (qEEG), namely the use of computer methods to assist with and improve the yield of EEG analysis.

The teaching part will be an introduction to functional brain networks. We will see how a multi-channel EEG recording can be interpreted as a graph, that is, a collection of nodes (the EEG signals) connected by links (a mathematical relation between the signals). The structure of the graph helps identifying potential targets for specific therapy and understanding the dynamics of pathological processes. In the research part, I will present qEEG studies performed over the last years at the Bern University Hospital. In particular, I will focus on two studies where deep learning (DL) was used for diagnostic and prognostic evaluation of comatose patients. This will serve as introduction for the presentation of my research plan during the first years at the University of Fribourg. The goal is to develop an automatic DL-based system for interpreting clinical EEGs in a similar manner as specialized neurologists do. In particular, we will automatically extract labels from medical reports in order to train DL-networks to recognize background, focal slowing and epileptiform activity. I will conclude with a longer-term perspective on the use of DL for EEG analysis.

Fribourg, le 08 février 2022
Prof. Gregor Rainer, Doyen et Président de la Commission d’appel