University of Houston - Biomedical Engineering Seminar
Friday, October 2, 2020, 12 noon
Via Zoom: https://uofh.zoom.us/j/92470065206

Intracranial electrophysiological measurement in human visual cortex

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Abstract

Many different signals can be measured from the human brain, each driven by different underlying physiology. The interpretation of these mesoscale signals is essential to develop biomarkers of neurological diseases, but presents a complex problem as these signals reflect the aggregate physiology from neuronal populations. I will show a series of studies of the intracranial EEG (iEEG) signals in human visual cortex and show how these can be predicted from the visual inputs using computational models. I will discuss the effects of underlying dynamics such as neuronal synchrony on these measurements and show how some signals can be used in settings of brain-machine interfaces or to identify biomarkers of neurological disease.

Biosketch

Dora Hermes studies the signals measured in the living human brain in order to identify biomarkers of neurological and neuropsychiatric diseases and develop neuroprosthetics to interface with the brain. She did her PhD working with Nick Ramsey at the UMC Utrecht in the Netherlands, where her work on integrating functional MRI with intracranial EEG measurements received the Editor's Choice Award from the Organization for Human Brain Mapping. During her postdoc, she worked with Jonathan Winawer (NYU) and Brian Wandell (Stanford University), and received a prestigious Veni-fellowship in The Netherlands to study the relation between visual input and neural oscillations in health and disease. She is an Assistant Professor at the Dept. of Physiology and Biomedical Engineering at the Mayo Clinic

Link to publications:
https://scholar.google.com/citations?user=d33Z2KEAAAAJ&hl=en&oi=ao