

DANDRITE Topical Seminar

Friday 28 July 2017
at 13.00 – 13.45

Aarhus University, building 1171, room 347 (Aud. 6)

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Seminar on “How do we interpret the neuronal talking among populations? Information Extraction Methods from Microelectrode Array Measurements of Neuronal Networks”

Microelectrode arrays (MEAs) record mesoscale extracellular electrophysiological activity, which consists of local field potentials and extracellular action potentials. MEAs with electrode diameter of 10 to 30 μm and an inter-electrode distance of 100 to 500 μm have been found beneficial for studying local neuronal activity and population interactions. Such sort of information can be utilized to assess general firing behaviors of local neuronal populations, information flow between neuronal populations and relatedly, connectivity based neuronal network analysis.

In our works, we have used information theory based tools and methods to interpret neuronal signals recorded from a single or multiple recording locations. We have analyzed the collected information to understand functionality during spontaneous development and maturation of neuronal networks and responses to pharmacological/electrical manipulation.

In conclusion, with our developed and applied methods we have extracted information which provides important complements to the existing ones to understand neuronal behavior and population-wise neuronal interactions.

Host: Group Leader Poul Henning Jensen, DANDRITE, Dept. of Biomedicine, Aarhus University