PSL UNIVERSITÉ PARIS

PSL GRADUATE PROGRAM

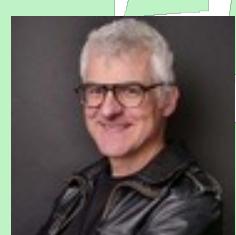# Advanced Course in Computational Neuroscience

October-December 2023
Ecole Normale Supérieure, Paris

For **Master 2 and PhD students** with computational background. The course presents biology, modelling, simulations, data analysis, signal processing, machine learning and clinical relevance.

Covered Topics

- Brain function and clinical issues
- Hearing and mechanical transduction in hair cells
- Vision and signal transduction in photoreceptors
- Neural coding in the retina and vision restoration
- Electrochemistry of synapses and dendritic spines
- Neuron-glial interactions and synaptic plasticity
- Emergence and interplay of brain rhythms
- Spatial memory and navigation
- Large scale brain activity in normal and pathological states
- Big data analysis applied to behavioral neuroscience
- Analysis and interpretation of EEG data
- Brain-Computer interface

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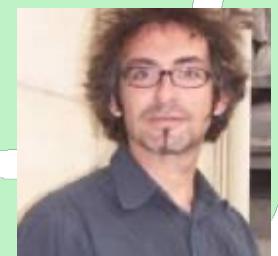
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