ÉCOLE DE PHYSIQUE DES HOUCHES

CNRS

cea

UGA Université Grenoble Alpes

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ENS DE LYON

PSL★ UNIVERSITÉ PARIS | Qlife

SFO Société Française d'Optique French Branch of the EOS

International Thematic School on
ALL OPTICAL INTERROGATION OF NEURONAL NETWORKS IN VIVO

April 25th-30th, 2021   Les Houches Physics School, Chamonix Mont Blanc Valley, France

Scope of the school

Thanks to the development of optoge-netics, activity of neural networks can be recorded and modulated using optical methods. These methods have become major tools for studying the neural mechanisms underlying perception, memory and behavior in animal models.

The objective of this school is to provide solid bases on the principles and on the practical implementa-tions of advanced techniques to record and to modulate neuronal activity in vivo.
In particular, emphasis will be made on new methodologies allowing to improve their speed, depth of penetration, field of view, and applicability to the awake head-fixed or unconstrained animal. An overview of available optogenetic tools and targeted labeling technologies will be given. Methods for signal analysis, population activity representation and network modeling will be introduced, showing the wealth of information that these experiments can provide.
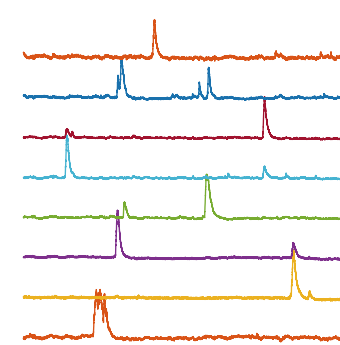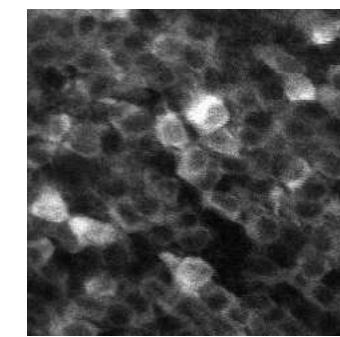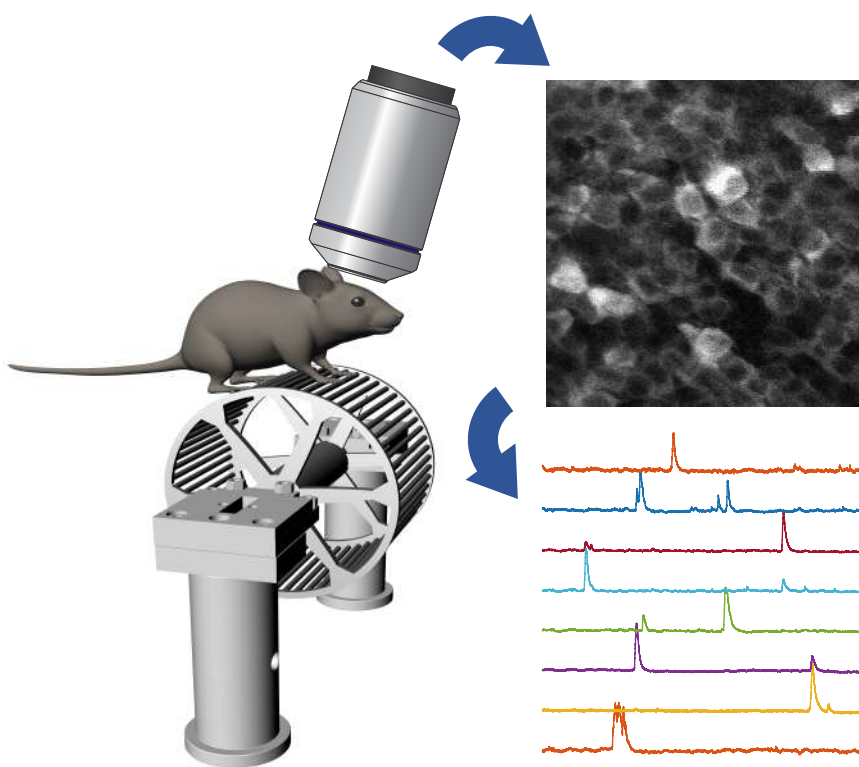
www.sfoptique.fr

School organizers

Cathie Ventalon (ENS, FR)
Laurent Bourdieu (ENS, FR)

Lecturers

Jerome Mertz (Boston Univ, USA)
Liangyi Chen (Peking Univ, CN)
Tommaso Fellin (IIT, IT)
Cathie Ventalon (ENS, FR)
Emiliano Ronzitti (Vision Inst., FR)
Isabelle Férézou (NeuroPSI, FR)
Jean-François Léger (ENS, FR)
Laurent Bourdieu (ENS, FR)
Sébastien Wolf (ENS, FR)
Stéphane Dieudonné (ENS, FR)
Vincent Villette (ENS, FR)
Volker Bormuth (UPMC, FR)

The school will include practical work in optics and analysis

The school is designed for students and researchers in neurophysiology using optical methods and for physicists participating in their development.

Application deadline (short motivation letter + abstract): January 26th 2021

https://www.sfoptique.org/pages/ecoles-thematiques/2021-all-optical-interrogation-of-neuronal-networks-in-vivo/