



Human Brain Project  
Education Programme

## 3<sup>RD</sup> HBP CURRICULUM WORKSHOP SERIES

### MEASURING AND MODELLING BRAIN STATES

28-29 MARCH 2020  
DAS CENTRAL SÖLDEN, AUSTRIA

### SCIENTIFIC PROGRAMME



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# WORKSHOP INFORMATION

The final workshop of the 3<sup>rd</sup> HBP Curriculum Workshop Series invites researchers interested in measuring and modelling brain states at multiple scales. At the cellular level, the appearance of different brain states (such as wake, sleep, anesthesia) is reviewed at the scale of neurons, from extracellular recordings in both human and animal models. From a modelling perspective, workshop participants will learn how cellular data can be used to build model networks of spiking neurons and how mean-field techniques are used to derive population models of different brain states from these network models.

This workshop is a satellite event to the **22<sup>nd</sup> International Neuroscience Winter Conference** ([www.winterneuroscience.org/2020/](http://www.winterneuroscience.org/2020/)).

## Scientific Chair:

Alain Destexhe | Paris Saclay University

## Organisers:

Sylvia Aßlaber | Medical University Innsbruck  
Judith Kathrein | Medical University Innsbruck  
Alois Saria | Medical University Innsbruck

## Contact:

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## Further information:

<http://bit.ly/ModellingBrainStates>



Human Brain Project

université  
PARIS-SACLAY

Co-funded by  
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## SATURDAY 28 MARCH 2020

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- 13:00 - 14:00    Registration
- 14:00 - 14:15    Welcome & introduction
- 14:15 - 15:15    Brain states at the level of single neurons in mice  
Mavi Sanchez-Vives | University of Barcelona
- 15:15 - 16:15    Optogenetic control of arousal state transitions  
Louis de Lecea | Stanford University
- 16:15 - 16:45    Coffee break
- 16:45 - 17:45    Linking cellular levels and large-scale using mean-field models  
Alain Destexhe | Paris-Saclay University
- 17:45 - 18:45    Modelling normal and pathological brain states at the whole-brain level  
Viktor Jirsa | Aix-Marseille University
- 18:45 - 19:00    Wrap up Day 1

## SUNDAY 29 MARCH 2020

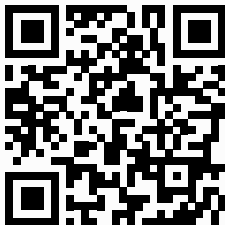
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- 09:00 - 10:00 EEG global microstates as basic building blocks of brain information processing  
Thomas Koenig | University of Bern
- 10:00 - 11:30 Student presentations
- 11:30 - 12:30 Lunch break
- 12:30 - 13:30 Data-driven discovery of brain states  
Fede Raimondo | University of Liège
- 13:30 - 14:30 Bistability, slow waves and complexity in physiological and pathological brain states  
Marcello Massimini | University of Milan
- 14:30 - 15:00 Round table discussion

## NOTES

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