

Computational Psychiatry Course Zurich 2023



COURSE SCHEDULE





MONDAY, 04.09.

PSYCHIATRY

TIME (CEST)	TALK TITLE	SPEAKER	SITE
08:30 - 08:45	INTRODUCTION TO DAY 1	Klaas Enno Stephan	Zurich
08:45 - 09:35	INTRODUCTION TO COMPUTATIONAL PSYCHIATRY	Klaas Enno Stephan	Zurich
09:45 - 10:35	SCHIZOPHRENIA	Jakob Siemerikus	Zurich
10:55 - 11:45	DEPRESSION AND AFFECTIVE DISORDERS	Marie Zipser	Zurich
11:55 - 12:45	AUTISM	Helene Haker Rössler	Zurich
<i>Lunch Break</i>			
14:05 - 14:55	PSYCHOSOMATICS	Roland von Känel	Zurich
15:05 - 15:55	FATIGUE	Inês Pereira	Zurich





TUESDAY, 05.09.

MODELING BASICS

TIME (CEST)	TALK TITLE	SPEAKER	SITE
08:15 - 08:30	INTRODUCTION TO DAY 2	Klaas Enno Stephan	Zurich
08:30 - 09:20	INTRODUCTION TO COMPUTATIONAL MODELING: GENERATIVE MODELS	Klaas Enno Stephan	Zurich
09:30 - 10:20	BUILDING A MODEL: A STEP-BY-STEP GUIDE	Alex Hess	Zurich
10:40 - 11:30	FITTING A MODEL: MAXIMUM LIKELIHOOD	Florian Schönleitner	Zurich
11:40 - 12:50	FITTING A MODEL: VB & MCMC	Lionel Rigoux	online
<i>Lunch Break</i>			
14:10 - 15:05	SELECTING A MODEL: BMS	Klaas Enno Stephan	Zurich
15:15 - 16:00	MODELS OF PERCEPTION: PSYCHOPHYSICS	Frederike Petzschner	Zurich
16:20 - 17:15	MODELS OF PERCEPTION: BAYESIAN MODELS OF PERCEPTION	Frederike Petzschner	Zurich





WEDNESDAY, 06.09.

MODELS OF
PERCEPTION & ACTION SELECTION

TIME (CEST)	TALK TITLE	SPEAKER	SITE
08:15 - 08:30	INTRODUCTION TO DAY 3	Klaas Enno Stephan	Zurich
08:30 - 09:30	REINFORCEMENT LEARNING	Woo-Young Ahn	Zurich
09:40 - 10:40	MODELS OF PERCEPTION: PREDICTIVE CODING	Alex Hess	Zurich
11:00 - 12:00	FROM PERCEPTION TO ACTION: HGF	Chris Mathys	Zurich
12:10 - 13:10	MODELS OF ACTION SELECTION: MDP	Kevin Lloyd	Zurich
<i>Lunch Break</i>			
14:30 - 15:30	MODELS OF ACTION SELECTION: ACTIVE INFERENCE	Ryan Smith	Zurich
15:50 - 16:50	MODELS OF ACTION SELECTION: DDM	Matthew Nassar	Zurich
17:00 - 17:50	MODELS OF METACOGNITION	Marion Rouault	online



Schedule



THURSDAY, 07.09.

MACHINE LEARNING & MODELS OF CONNECTIVITY

TIME (CEST)	TALK TITLE	SPEAKER	SITE
08:15 - 08:30	INTRODUCTION TO DAY 4	Klaas Enno Stephan	Zurich
08:30 - 09:30	MODELING CONNECTIVITY: BIOPHYSICAL NETWORK MODELS	Michael Breakspear	online
09:40 - 10:40	MACHINE LEARNING BASICS	Charlotte Fraza	Zurich
11:00 - 12:00	MACHINE LEARNING ADVANCED	Andre Marquand	Zurich
12:10 - 13:10	MODELING CONNECTIVITY: DCM FOR FMRI	Jakob Heinzle	Zurich
<i>Lunch Break</i>			
14:30 - 15:30	MODELING CONNECTIVITY: REGRESSION DCM FOR FMRI	Imre Kertesz	Zurich
15:40 - 16:40	MODELING CONNECTIVITY: DCM FOR EEG	Nikola Jajcay	Zurich
16:40 - 18:00	TUTORIAL HELPDESK	Florian Schönleitner Imre Kertesz	hybrid



Schedule



FRIDAY, 08.09.

STATE-OF-THE-ART APPLICATION TALKS

TIME (CEST)	TALK TITLE	SPEAKER	SITE
08:45 - 09:00	INTRODUCTION TO DAY 5	Klaas Enno Stephan	Zurich
09:00 - 09:50	LARGE-SCALE NETWORKS IN THE HUMAN CEREBRAL CORTEX	Thomas Yeo	online
10:00 - 10:50	10 YEARS OF BAYESIAN THEORIES OF AUTISM: WHAT HAVE WE LEARNED?	Peggy Series	Zurich
11:10 - 12:10	ROUNDTABLE DISCUSSION	Thomas Parr, Peggy Series, Tobias Kaufmann, Katharina Wellstein, Inês Pereira, Marion Rouault, Christoph Mathys, Ryan Smith, Janaina Mourão-Miranda, Klaas Enno Stephan	hybrid
<i>Lunch Break</i>			
14:00 - 14:50	ROLE OF DOPAMINE IN MOTIVATION AND BEHAVIOURAL CONTROL. LESSONS ABOUT COMPUTATION FROM PSYCHOPHARMACOLOGY.	Roshan Cools	Zurich
15:00 - 15:50	MACHINE LEARNING AND NEUROIMAGING IN PSYCHIATRY	Janaina Mourão-Miranda	Zurich
16:10 - 17:00	PATHOLOGIES OF (ACTIVE) INFERENCE	Thomas Parr	Zurich
17:10 - 18:00	COMPUTATIONAL PSYCHIATRY: WHAT CAN WE LEARN FROM LARGE-SCALE BRAIN IMAGING AND GENETICS DATA?	Tobias Kaufmann	Zurich



Schedule



SATURDAY, 09.09.

TUTORIALS

TUTORIAL [LOCATION]	TUTORIAL TITLE	SPEAKER	TIME [CEST]
TUTORIAL A [ZURICH]	HGF	Tore Erdmann Nicolas Legrand	Morning: 08:15-11:45
TUTORIAL B [HYBRID]	ACTIVE INFERENCE (SPM)	Ryan Smith	Morning: 08:15-11:45 Afternoon: 13:15-16:45
TUTORIAL C [ZURICH]	REINFORCEMENT LEARNING	Woo-Young Ahn Jeung-Hyun Lee Eunhwi Lee	Morning: 08:15-11:45 Afternoon: 13:15-16:45
TUTORIAL D [ONLINE]	DRIFT DIFFUSION MODELS	Ariel Zylberberg Max Pensack	Afternoon: 13:15-16:45
TUTORIAL E [ONLINE]	MODELING CRASH COURSE	Lionel Rigoux Matthias Müller- Schrader	Morning: 08:15-11:45 Afternoon: 13:15-16:45
TUTORIAL F [ZURICH]	MACHINE LEARNING	Charlotte Frazz Hannah Savage	Morning: 08:15-11:45
TUTORIAL G [ONLINE]	DYNAMIC CAUSAL MODELING FOR EEG	Ashley Tyrer Florian Schönleitner	Morning: 08:15-11:45 Afternoon: 13:15-16:45
TUTORIAL H [ZURICH]	DYNAMIC CAUSAL MODELING FOR FMRI	Jakob Heinzle Dina von Werder	Morning: 08:15-11:45 Afternoon: 13:15-16:45
TUTORIAL I [ONLINE]	METACOGNITION	Marion Rouault Katja Brand	Afternoon: 13:15-16:45





SATURDAY, 09.09.

TUTORIALS

TUTORIAL [LOCATION]	TUTORIAL TITLE	SPEAKER	TIME [CEST]
TUTORIAL J [AM ZURICH PM ONLINE]	ADVANCED MODELS OF CONNECTIVITY: RDCM	Imre Kertesz Herman Galioulline	Morning: 08:15-11:45 (Zurich) Afternoon: 13:15-16:45 (online)
TUTORIAL K [ONLINE]	BIOPHYSICAL MODELS: INTRODUCTION TO THE BRAIN DYNAMICS TOOLBOX	Michael Breakspear Stewart Heitmann	Morning: 08:15-11:45



Speakers

Woo-Young Ahn

Katja Brand

Michael Breakspear

Roshan Cools

Tore Erdmann

Charlotte Fraza

Herman Galiouline

Helene Haker Rössler

Jakob Heinzle

Stewart Heitmann

Alex Hess

Nikola Jajcay

Tobias Kaufmann

Imre Kertesz

Eunhwi Lee

Jeung-Hyun Lee

Nicolas M. S. Legrand

Kevin Lloyd

Andre Marquand

Matthias Müller-Schrader

Christoph Mathys

Janaina Mourao-Miranda

Matthew Nassar

Thomas Parr

Max Pensack

Inês Pereira

Frederike Petzschner

Lionel Rigoux

Marion Rouault

Hanna Savage

Florian Schönleitner

Peggy Series

Jakob Siemerikus

Ryan Smith

Klaas Enno Stephan

Ashley Tyrer

Roland von Känel

Dina von Werder

Thomas Yeo

Marie Zipser

Ariel Zylberberg

Seoul National University, South Korea

University of Zurich & ETH Zurich, Switzerland

University of Newcastle, Australia

Radboud University Medical Center, Netherlands

University College London, UK

Donders Institute, Netherlands

University of Zurich & ETH Zurich, Switzerland

University of Zurich & ETH Zurich, Switzerland

University of Zurich & ETH Zurich, Switzerland

Victor Chang, Cardiac Research Institute, Australia

University of Zurich & ETH Zurich, Switzerland

National Institute of Mental Health, Czechia

University of Tübingen, Germany

University of Zurich & ETH Zurich, Switzerland

Seoul National University, South Korea

Seoul National University, South Korea

Aarhus University, Denmark

Max-Planck Institute, Germany

Donders Institute, Netherlands

University of Zurich & ETH Zurich, Switzerland

Aarhus University, Denmark

University College London, UK

Brown University, USA

University College London, UK

Columbia University, USA

University of Zurich & ETH Zurich, Switzerland

Brown University, USA

Max Planck Institute Cologne, Germany

École Normale Supérieure, France

Donders Institute, Netherlands

University of Zurich & ETH Zurich, Switzerland

University of Edinburgh, UK

University of Zurich & ETH Zurich, Switzerland

Laureate Institute for Brain Research, USA

University of Zurich & ETH Zurich, Switzerland

Aarhus University, Denmark

University Hospital Zurich, Switzerland

University of Zurich & ETH Zurich, Switzerland

National University of Singapore, Singapore

Sanatorium Kilchberg, Switzerland

Columbia University, USA

Organizers



Translational Neuromodeling Unit



**KLAAS ENNO
STEPHAN**



**ALEXANDRA
KALBERER**



**HEIDI
BRUNNER**



**FLORIAN
SCHÖNLEITNER**

<https://www.translationalneuromodeling.org/cpcourse/>



**University of
Zurich** ^{UZH}

ETH zürich

