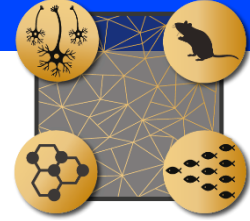




Zenith

INTERNATIONAL PHD PROGRAM IN NEUROSCIENCE

In collaboration with SmartNets



WEDNESDAY, 6 OCTOBER 2021
AT 5:00 PM (CEST)

JAKOB MACKE
UNIVERSITY OF TÜBINGEN, GERMANY



ZENITH SEMINARS

SIMULATION BASED INFERENCE FOR NEUROSCIENCE AND COMPUTATIONAL IMAGING

Mechanistic modelling in neuroscience aims to explain observed phenomena in terms of underlying causes. However, finding mechanistic models which are consistent with neural data presents a significant challenge. I will talk about our recent work on developing machine learning methods — so called 'simulation based inference methods' — for addressing this challenge, and for automatically finding model-parameters which are compatible with raw data or selected data features. I will demonstrate the power and flexibility of this approach on several examples from neuroscience, and also show how it can be useful to data-analysis questions in computational imaging.

Jakob Macke was appointed as Professor for "*Machine Learning in Science*" at Eberhard Karls University Tübingen, Faculty of Mathematics and Natural Sciences in 2020. Jakob studied mathematics at the University of Oxford. After his studies, he worked as a doctoral student at the Max Planck Institute for Biological Cybernetics in Tübingen, as a postdoc at the Gatsby Unit at University College London and as a Bernstein Fellow at the Max Planck Institute in Tübingen. From 2015 to 2018, he was Max Planck Group Leader at the Caesar Research Centre in Bonn, and from 2017 he was also professor at the Centre for Cognitive Science at the Technical University of Darmstadt. From 2018 to 2020, Macke was Professor of Computational Neuroengineering at the Technical University of Munich. From 2013 to 2018 he was a member of the Young Academy at the German Academy of Sciences Leopoldina.

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