

Guest Lecture (via Zoom) Friday, 14.01.2022, 14:15

Title: Dynamics of visual cognition: A spatio-temporally resolved and algorithmically explicit account

Speaker: Radoslav Martin Cichy
Freie Universität Berlin
Department of Education & Psychology



Zoom-Link: <https://uni-regensburg.zoom.us/j/63550364269>
Meeting ID: 635 5036 4269
Passcode: 146903

Abstract:

Understanding visual cognition in the brain requires answering three questions: what is happening where and when in the human brain when we see? I will present recent work that takes on this challenge in an integrated analysis framework combining human magnetoencephalography (MEG), functional magnetic resonance imaging (fMRI) and artificial deep neural networks (DNNs). The talk has two parts. In the first part, I will show how fMRI and MEG can be combined using multivariate analysis techniques to yield a spatio-temporally integrated view of human brain activity. I will give examples from vision, delineate the method's future potential and highlight current work. In the second part I will show how DNNs can be used to understand the human visual system. Building on the observation that DNNs build for engineering purposes predict the spatiotemporal processing hierarchy of the visual brain well, I will present recent work harvesting the predictive and exploratory potential of this new modelling framework.