

Thursday, September 10, 2026 at 13:00

Speaker:

Fleur Zeldenrust

Associate Professor at the Donders Centre for Neuroscience, Radboud University



Heterogeneity in the brain: lessons from theory and experiment.

Location: Room 2.082 | 2nd floor | Am Propsthof 49 | 53121 Bonn
(Online link: <https://shorturl.at/s1EB1>)

Abstract:

Neurons in the brain are not identical: they show a wide variety of properties. Recently, we showed that this neural diversity itself is not static: it depends on for instance input characteristics and on neuromodulatory state. How does this heterogeneity influence the dynamics and information processing of neural networks? Is this a dial the brain can use to adapt to the requirements of different tasks? I will discuss our latest analysis of experimental data on the heterogeneity of cell properties and how this influences network dynamics and performance in different tasks using different types of network simulations.

About the Speaker

Fleur Zeldenrust started studying physics, but switched to neuroscience during her master's degree. She obtained a PhD in computational neuroscience in 2012, from the University of Amsterdam, supervised by Wytse Wadman. After performing postdoctoral research at the École Normale Supérieure in Paris with Boris Gutkin and Sophie Denève, she returned to the Netherlands to design a bachelor track in computational neuroscience in the Psychobiology BSc degree at the University of Amsterdam. An NWO Veni grant (2015) and later a Marie Curie Training Network grant (2019, 'SmartNets') allowed her to start her own research group at the Donders Institute for Brain, Cognition and Behaviour of the Radboud University in Nijmegen. She recently obtained an NWO Vidi grant (2022) to research the influence of neuromodulators on information processing in the brain. Next to her research, she is very passionate about communicating neuroscience to the public, (co-)founding amongst others the Dutch Brain Olympiad and the BrainHelpDesk. Recently, she was also one of the founders of a new BSc program in human neuroscience at the Donders Institute of the Radboud University.

For more information on the event, please contact:
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Host:
Professor Dominik Bach,
Centre of Artificial Intelligence and
Neuroscience (caian)