

## Introductory Remarks to Symposium 11

### Neuroscience of naturalistic navigation and foraging in non-human primates

*Irene Lical and Alexander Gail, Goettingen*

A main aim of system neuroscience research in primates is to understand the neural underpinnings of goal directed behavior. With the advance in wireless technologies for neural recordings, video-based motion tracking and powerful tools for full-body behavior quantification, unprecedented opportunities arise for studying brain networks during naturalistic behaviours. In particular, ecologically highly relevant behaviors such as multi-source foraging, free exploration in complex environments and social interactions have become accessible for neurophysiological studies.

This symposium brings together international researchers pioneering the field of neurophysiology in non-human primates during unrestrained behaviors in complex environments.

Daniel Huber will present the latest development of Etho-Loop, a novel tracking system able to follow movements and analyze complex behaviors of unrestrained mouse lemurs in real time in combination with wireless neural recordings. Dora E. Angelaki will show how hippocampal and cortical activity in unrestrained rhesus monkeys relate to foraging behavior both in freely moving and virtual reality environments. Zurna Ahmed will introduce the Exploration Room, a novel modular experimental setting encouraging unrestrained, yet repetitive full-body behaviors beyond walking in rhesus macaques while recording from the frontoparietal reach network. Irene Lical and Neda Shahidi will highlight novel paradigms in the Exploration Room for studying spatial cognition during naturalistic solo or dyadic foraging and the frontoparietal representations of dynamic evaluation of choices. Jan Zimmermann will present how unconstrained behavior is organized across multiple spatial and temporal scales in rhesus monkeys and how electrophysiology experiments can give us a unique insight into these processes.

## Symposium 11

*Thursday, March 23, 2023  
11:00 - 13:00, Lecture Hall 102*

Chairs: Irene Lical and Alexander Gail, Goettingen

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| 11:00 | <b>Opening Remarks</b>   |
| 11:05 | Daniel Huber, Geneva, Switzerland<br>CLOSED-LOOP NEUROETHOLOGY IN FREELY RANGING MOUSE LEMURS (S11-1)  |
| 11:25 | Dora E. Angelaki, New York, USA<br>ACTIVE SENSING AND FLEXIBLE NEURAL CODING DURING VISUALLY GUIDED VIRTUAL NAVIGATION (S11-2)   |
| 11:45 | Zurna Ahmed, Goettingen<br>THE EXPLORATION ROOM (EXR) – A NOVEL ENVIRONMENT FOR NEUROPHYSIOLOGICAL RECORDINGS IN FREELY MOVING RHESUS MACAQUES EXHIBITING ECOLOGICALLY RELEVANT BEHAVIOURS (S11-3) |
| 11:55 | Irene Lical & Neda Shahidi, Goettingen<br>NEW APPROACHES TO THE STUDY OF SENSORIMOTOR BASIS OF FORAGING BEHAVIOUR IN NON-HUMAN PRIMATES (S11-4)  |
| 12:15 | Jan Zimmermann, Minneapolis, USA<br>TIMESCALES OF BEHAVIOUR AND NEURAL PROCESSING IN UNCONSTRAINED MACAQUES (S11-5)  |
| 12:35 | <b>Discussion and concluding Remarks</b>   |

