Workshop on stimulus programming using Psychtoolbox (PTB) and Matlab

Teaching Contents

- First steps with PTB including important Matlab functions
- Creating visual stimuli (text, images, objects)
- Animation of stimuli in experiments (interactively or predefined)
- Video presentation and online modification
- Sound presentation
- Creating a graphical user interface (GUI) with Matlab for error-free experiments

Knowledge acquisition

- Competence in programming with Matlab and PTB
- Creating first experiments
- Designing scientific experiments – from the scratch to a complete experimental setup with result storage

Day 1

Unit 1: First steps with PTB

- Checking correct installation
- Usage of the function `Screen`
- Displaying some text

Unit 2: Interaction with subjects

- Get keypresses with `KbCheck`
- Mouse button press and mouse movements
- Move text and images on a screen

Unit 3: Practice 1

- Create an eye-hand coordination experiment

Day 2

Unit 4: Drawing lines and dots

- Drawing single and multiple lines
- Drawing single and multiple dots

Unit 5: Drawing and filling rectangles and polygons

- Drawing rectangles with different line width
- Drawing polygons

Unit 6: Practice 2

- Create a function for a visual analogue scale (instead of Likert scales)

Day 3

Unit 7: Show and modify videos

- Open videos and show frames timely
- Modify videos (size, color, content)

Unit 8: Create and play sounds

- Create beeps
- Load and play wave files, record audio data

Unit 9: Create a graphical user interface (GUI) integrating all experiments

- Create a GUI
- Usage of callbacks, tags, flags