brainbox

initiative

Fundamentals of tES

Dec 3

09:30 Welcome and introduction

09:45 Lecture: **Basic Principles of tES**

- Participants expectations and experience
- tES: Why use it and when?
- Overview of the history of tES and how it is applied
- Using tES to study brain function and behaviour
- Covering tDCS, tACS, tRNS, and HD-tDCS
- Basic electrophysiology of tES

10:45 Interactive demonstration: **Introduction to tES Devices**

Brief familiarisation with hardware and setup:

- Familiarisation with user interface and settings
- Familiarisation with electrode options
- Requirements for combining with imaging techniques

12:00 Lunch

13:00 Practical session

Delegates will have the opportunity to:

- Learn the dos and don'ts of tES
- Program stimulators
- Prepare and apply electrodes (sponge vs paste)
- Check electrode impedances
- Use different electrode montages in the following ways:
  1. Application of tACS over the visual cortex to induce phosphenes, including assessment of different tACS parameters
  2. DEMO: Effects of tDCS over motor cortex as measured by TMS, including measuring and interpreting motor evoked potentials (MEP) before and after tDCS, using TMS

15:00 Break

15:30 Lecture: **Considerations for tES study design**

- tES as a tool in cognitive neuroscience and clinical studies
- How to deal with outcome variability
- Experimental design

16:00 Wrap up and Q&A session

17:00 Workshop close

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