Methods for designing and analyzing human MRI studies

This updated 4-day course combines theory (morning lectures) and practical PC sessions in small groups (afternoon). There are 2 user-levels. Day 1 and 2 are for beginners and day 3 and 4 for advanced users. We have a max. capacity of 12 persons, registration is on a first-come-first-served basis

Goals:

- get an overview of human MRI applications with a focus on functional imaging
- understand the basic principles of fMRI design and analysis
- be prepared for in-depth methods courses elsewhere (e.g., Hamburg or London SPM course)

Language: English

Location: NIC offices, Building 308C for both theory and practical sessions (exact rooms to be confirmed)

Map of the University Medical Center (Langenbeckstr. 1, 55131 Mainz):

Registration: nic-course-human-MRI-Studies@unimedizin-mainz.de
Dr. Kenneth Yuen, Tel: 06131/17-6130
Please indicate your field of research, your user-level (advanced/beginner) and which days you want to participate.

Programme:

Monday, Apr 24th for beginners	
9:15 – 10:00	Basic MRI contrasts
10:00 – 10:30	Physiological basis of the BOLD signal
	Coffee break
10:45 – 11:30	Preprocessing
	Lunch break
13:00 – 16:00	Practical session: Preprocessing

Tuesday, Apr 25th for beginners	
9:00 –9:45	General Linear Modeling
9:45 – 10:30	Inference statistics
	Coffee break
10:45 – 11:30	fMRI design principles
	Lunch break
13:00 – 16:00	Practical session: 1st & 2nd level analysis

Wednesday, Apr 26th for advanced users	
9:00 –10:30	Voxel-based Morphometry
	Coffee break
10:45 – 11:30	PET analysis using SPM
11:30 – 12:15	Integrated TMS/EEG-fMRI
	Lunch break
13:30 – 16:00	Practical session: Advance modules

Thursday, Apr 27th for advanced users	
9:00 –10:15	Reproducible and flexible data analysis pipelines
10:15 – 11:00	Multivoxel pattern analyses
	Coffee break
11:15 – 12:30	Neuroimaging meta-analysis & meta-analytic modeling
12:30 – 13:30	Open discussion