Berlin School of Mind and Brain
Teaching Weeks Spring 2010

Teaching Week 2: **Neuroimaging**
22 – 26 February 2010
Course Organizer: John-Dylan Haynes

Location: Room 123, Luisenstraße 56, 10117 Berlin Mitte

Nota bene: Lectures on Mon, Tue, Thu & Fri

	Mon 22 Feb	**Tue 23 Feb**	**Wed**	**Thu 25 Feb**	**Fri 26 Feb**
9.15–10.45	MRI physics, technology and safety (Ittermann)	fMRI preprocessing (Weygandt)	no lectures	fMRI connectivity analyses (Sterzer)	Transcranial magnetic stimulation (Blankenburg)
Break					
11.00–12.30	MRI physics, technology and safety (Ittermann)	fMRI preprocessing (Weygandt)		fMRI connectivity analyses (Sterzer)	EEG basics (Spitzer)
Break					
13.30–15.00	Neurovascular coupling and BOLD response (Allefeld)	fMRI statistical modeling and hypothesis testing (Anders)		Multivariate analysis and decoding (Haynes)	Event-related potentials and spectral analysis (Spitzer)
Break					After last session: Multiple Choice Test, 30 questions
15.15–16.45	Neurovascular coupling and BOLD response (Allefeld)	fMRI statistical modeling and hypothesis testing (Anders)		Multivariate analysis and decoding (Haynes)	

Keywords
MRI physics, technology and sequences, MRI-safety, neurovascular coupling and the BOLD-response, preprocessing of fMRI data, statistical modelling and hypothesis testing (GLM), connectivity analyses (PPI, DCM, Granger causality), multivariate methods (ICA, clustering, pattern classification), technical, physiological and bioelectric/biomagnetic principles, evoked potentials, spectral analyses, transcranial magnetic stimulation

Textbook

Obligatory:
Huettel, Song & McCarthy (2004). Functional Magnetic Resonance Imaging.
Chapters: 1 – 12.
Recommended reading: Rugg & Coles (1996). Electrophysiology of Mind: Event-Related Brain Potentials and Cognition.