IMPRS Lecture on "Neuroimaging Physics & Signal Processing: Magnetic Resonance & Optical Imaging"
Block Course
18 – 21 January 2016

	18-JAN-2016	19-JAN-2016	20-JAN-2016	21-JAN-2016
09:00 – 10:30	**Harald Möller** Signal sources and principles of neuroimaging	**Harald Möller** MR spatial encoding and gradient gymnastics	**Karsten Mueller** Voxel-based morphometry	**Harald Möller** MR imaging of cerebral blood flow and volume
10:30 – 10:45	Break	Break	Break	Break
10:45 – 12:15	**Karsten Mueller** Basic math refresher	**Harald Möller** Basic MRI pulse sequences	**Harald Möller** Hemodynamic response and BOLD contrast	**Harald Möller** Diffusion-weighted MR imaging
12:15 – 13:00	Break	Break	Break	Break
13:00 – 14:30	**Harald Möller** Nuclear spins and magnetic resonance	**Harald Möller** Structural MRI with contrast based on relaxation	**Karsten Mueller** Preprocessing and statistical evaluation of functional data	**Hellmuth Obrig** Imaging based on near infrared spectroscopy
14:30 – 14:45	Break	Break	Break	Break
14:45 – 16:15	**Harald Möller** Basic spin gymnastics & relaxation	**Karsten Mueller** Spatial processing of structural MRI data	**Karsten Mueller** Basic processing of MRI data using SPM and MATLAB functions	**Harald Möller** Magnetic resonance spectroscopy