

International Course

MIND AND BRAIN IV: Images of the working brain

September 20-26, 2004, Inter-University Center Dubrovnik, Croatia

www.brain.hr

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PROGRAM SCHEDULE

SUNDAY, September 19, 2004

17:00 - 19:00 REGISTRATION Room #5, 2nd floor

MONDAY, September 20, 2004 LECTURE ROOM # 4, 2nd FLOOR

8:30 - 9:45 REGISTRATION Room #5, 2nd floor

9:45 - 10:00 Opening remarks (Selma Supek, Chris Wood)

Session chair: Selma Supek

10:00 - 11:00 Chris Wood: **Introduction to electromagnetic recordings of human brain activity**

11:00 - 11:45 *IUC WELCOME RECEPTION (Sesame Restaurant)*

11:45 - 12:45 Matti Hamalainen: **Introduction to MEG as a tool for functional imaging:
Sources, measurements, and analysis**

12:45 - 13:00 Discussion

13:00 - 15:00 *Lunch*

Session chair: Chris Wood

15:00 - 16:00 Matti Hamalainen: **MEG source modeling with accurate anatomical constraints**

16:00 - 17:00 Ole Jensen: **Spatial filtering applied to EEG and MEG data: Application and statistics**

17:00 - 19:00 GUIDED CITY TOUR

TUESDAY, September 21, 2004 **LECTURE ROOM # 4,** **2nd FLOOR**

Session chair: Tomas Paus

09:00 - 10:00 Peter Hagoort: **The tool-kit of cognitive neuroscience**
10:00 - 11:00 Peter Hagoort: **How the brain solves the binding problem for language**

11:00 – 11:30 *Coffee Break*

11:30 - 12:30 Rainer Goebel: **Investigating directed cortical interactions in time-resolved fMRI data**
12:30 - 13:00 Discussion

13:00 - 15:00 *Lunch*

Session chairs: Peter Hagoort and Giovanni Buccino

15:00 - 16:00 Rainer Goebel: **Self regulation of local brain activity using real-time functional magnetic resonance imaging**

STUDENT PRESENTATIONS

16:00 - 16:15 Bidet-Caulet, A., Bertrand, O.: **Both spatial and pitch sound variations activate the parietal cortex: An ERP and scalp current density study**
16:15 - 16:30 Kislyuk, D., Riikka Möttönen, **Audio-visual integration in human as revealed by McGurk effect and MMN**
16:30 - 16:45 Tomaskovic, S., Slabu, L., Renken, R., Wiersinga-Post, E., de Smit, F., Duifhuis, H.: **Audio-visual integration in speech perception: An fMRI study using the McGurk effect**
16:45 - 17:00 Greenberg, S., Deouell, L.Y.: **Crossmodal visual-auditory interference in object recognition process**
17:00 – 17:30 *Coffee Break*

STUDENT PRESENTATIONS

17:30 - 17:45 Szucs, D., Csepe, V.: **Neural stability and plasticity in a hardwired magnitude representation system**
17:45 – 18:00 Soltesz, F., Szucs, D., Csepe, V., Dekany, J.: **Behavioural and electrophysiological study of developmental dyscalculia**
18:00 – 18:15 Porubska, K., Preissl, H., Fritsche, A.: **Insulin resistance of the central nervous system: Recording of spontaneous activity and evoked magnetic fields with magnetoencephalography (MEG)**
18:15 – 19:00 Discussion

WEDNESDAY, September 22, 2004 **MAIN HALL,** **1st FLOOR**

Session chairs: Matti Hamalainen and Selma Supek

09:00 - 10:00 Risto Ilmoniemi: **Physics in neuroscience: To understand, influence, and measure the brain**
10:00 - 11:00 Risto Ilmoniemi: **Navigated Brain Stimulation as a probe of brain state**

11:00 - 11:30 *Coffee Break*

STUDENT PRESENTATIONS

11:30 - 11:45 Susac, A., Ilmoniemi, R., Supek, S.: **Spatiotemporal analysis of neuromagnetic responses to faces presented in an oddball paradigm**
11:45 - 12:00 Del Zotto, M., Zani, A., Mado Proverbio A.: **An ERP study on the functional properties of the visual word form area**
12:00 - 12:15 Boucard, C.C., Maguire R. P., Kunst, M.H., Roerdink, J.B.T.M., Jansonius, N.M., Hooymans, J.M.M., Cornelissen, F. W.: **Neuro-imaging of cortical degradation in retinal visual field defects**
12:15 - 12:30 Kicic, D., Nikulin, V.V., Lioumis, P., Ilmoniemi, R.: **EEG correlates of changes in motor-cortex excitability related to ipsilateral movement**
12:30 - 12:45 Kult, A., Pressnitzer, D., Supek, S., Rupp, A.: **Neuromagnetic activation in the human auditory cortex reflects auditory perceptual asymmetry**
12:45 - 13:00 Nahum, M., Renvall, H., Hari, R., Ahissar, M.: **Dynamics of auditory responses to tone pairs reveal an internal success-related signal**

13:00 - 15:00 *Lunch*

Session chair: Ole Jensen

15:00 - 16:30 Jari Karhu: **Navigated Brain Stimulation - Novel tool to "touch" the brain**

16:30 - 17:00 *Coffee Break*

17:00 - 18:00 **Technical demonstrations**

Matti Hamalainen: *Using FreeSurfer and MNEstream for cortically constrained minimum-norm solutions*

18:00 - 19:00 Discussion

THURSDAY, September 23, 2004 MAIN HALL, 1st FLOOR

Session chair: Risto Ilmoniemi

09:00 - 10:00 Cheryl Aine: **Functional neuroimaging: From basic research to clinical applications**

10:00 - 11:00 Cheryl Aine: **Temporal dynamics of attention/working memory: Normative and clinical studies**

11:00 - 11:30 *Coffee Break*

11:30 - 12:30 Jari Karhu: **Neuromagnetic images of human brain:**

What do neurological and psychiatric patients teach us?

12:30 - 13:00 Discussion

13:00 - 15:00 *Lunch*

Session chair: Jari Karhu

15:00 - 16:00 Tomas Paus: **Mapping structure and function of the adolescent brain**

16:00 - 16:15 *Coffee Break*

Workshop moderator: Jari Karhu

Cheryl Aine, Tomas Paus, Ole Jensen, Chris Wood

16:15 - 18:15 **WORKSHOP – Brain imaging in neurology and psychiatry**

20:00 - → *BANQUET DINNER at Sesame Restaurant*

FRIDAY, September 24, 2004 MAIN HALL, 1st FLOOR

Session chair: Olivier Bertrand

09:00 - 10:00 Giovanni Buccino: **The organization of the motor system: A modern perspective**

10:00 - 11:00 Giovanni Buccino: **The role of the mirror neuron system in action understanding, imitation learning, and language**

11:00 - 11:30 *Coffee Break*

11:30 - 12:30 Tomas Paus: **Exploring sensory-motor interactions by imaging and stimulating the human brain**

12:30 - 13:00 Discussion

13:00 - 15:00 *Lunch*

Session chair: Chris Wood

- 15:00 - 16:00 Olivier Bertrand: **EEG/MEG oscillatory synchronization in sensory and cognitive functions**
16:00 - 17:00 Olivier Bertrand: **Direct intracranial recording of auditory induced beta/gamma oscillations in human temporal cortex**
17:00 - 17:30 *Coffee Break*
17:30 - 18:30 Ole Jensen: **The role of oscillatory brain activity in the alpha and beta band during language perception**
18:30 - 19:00 Discussion

SATURDAY, September 25, 2004 MAIN HALL, 1st FLOOR

Session chair: Cheryl Aine

- 09:00 - 11:00 Arno Villringer: **Optical imaging of brain function**
11:00 - 11:30 *Coffee Break*
11:30 - 12:30 Chris Wood: **Toward integrated multi-modality functional imaging**
12:30 - 13:00 Discussion
13:00 - 15:00 *Lunch*

Session chair: Valeria Csepe

- 15:00 - 17:00 Arno Villringer: **Physiological basis of fMRI and new approaches to overcome its limitations**
17:00 - 17:30 *Coffee Break*
17:30 - 18:30 **Technical demonstrations**
Cheryl Aine: **MEGAN: A software package for MEG and EEG analysis and visualization Using MRVIEW and CSST for MEG/EEG multipole spatio-temporal modeling: An overview**
18:30 - 19:00 Discussion

SUNDAY, September 26, 2004 MAIN HALL, 1st FLOOR

Session chair: Ole Jensen

- 09:00 - 10:30 Valeria Csepe: **Images of changing brain functions: Language**
10:30 - 11:00 *Coffee Break*
11:00 - 12:00 Valeria Csepe: **Images of reorganized brain functions: Cognitive architecture**
12:00 - 12:45 Discussion
12:45 - 13:00 **Closing remarks (Selma Supek)**