

Final Program and Abstract Book

**2007 Joint Meeting of
the 6th International Symposium on Noninvasive Functional
Source Imaging of the Brain and Heart
and
the International Conference on Functional Biomedical Imaging**



October 12-14, 2007

Hangzhou, China

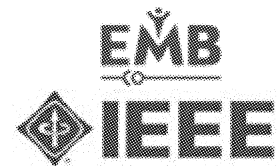


Table of Contents

Dipole Source Localization of Flash Visual Evoked Potentials to Cone Specific Stimuli.....	1
<i>J. Liebermann, S. Klee, J. Haueisen</i>	
Filtering of Noise in Electrocardiographic Signals Using An Unbiased and Normalized Adaptive Artifact Cancellation System.....	5
<i>Yunfeng Wu, Student Member, IEEE, Rangaraj M. Rangayyan, Ye Wu, Sin-Chun Ng</i>	
Event-Related EEG-Changes during Attempted Standing Up Task	9
<i>ZHOU Zhong-xing, MING Dong, WAN Bai-kun, CHENG Long-long</i>	
Dipole Source Localization in Magnetocardiography	13
<i>SHIQIN JIANG, MING CHI, LEI ZHANG, MING LUO, LEMIN WANG</i>	
Correlation Coefficients to map coherent brain sources.....	16
<i>Junpeng ZHANG, Yuan CUI</i>	
Accurate Removal of Baseline Wander in ECG Using Empirical Mode Decomposition	20
<i>Na Pan, Vai Mang I, Mai Peng Un, Pun Sio hang</i>	
Reconstruction of Myocardial Infarction Using the Improved Spatio-Temporal MAP-based Regularization.....	24
<i>Yuan Jiang, Dima Farina, Olaf Dössel</i>	
Optical Monitoring of Stimulus Evoked Neural Activities in Isolated Retina.....	28
<i>Xin-Cheng Yao, John S. George</i>	
GATE Simulation of a BGO Based High Sensitivity Small Animal PET Scanner	31
<i>Qinan Bao, Arion F. Chatziioannou</i>	
Comparison of different auto-solid angle approximations in BEM for EEG dipole source localization	35
<i>S. Asseondi, H. Hallez, Y. D'Asseler, I. Lemahieu</i>	
Online and Offline Implementation of Timefrequency Template Matching Method for Classifying Motor Imagery in Brain Computer Interface.....	39
<i>Qi Yang, Yin Fang, Vloděk Siemionow, Guang H. Yue</i>	
Keyhole Diffusion Tensor Imaging - A Fast Spin-Echo Based DTI Technique	43
<i>W.C. CHU, Y.R. CHEN, K.S. CHOU, PO-CHOU CHEN, S.W. SUN</i>	
Dominant Frequency Maps of Epicardial and Body Surface Potentials During Ventricular Fibrillation - a computer model study	47
<i>C.N. Nowak, L. Wieser, G. Fischer, B. Tilg, H.U. Strohmenger</i>	
Dipole estimation errors in EEG source localization due to not incorporating anisotropic conductivities of white matter in realistic head models.....	51
<i>Hans Hallez, Bart Vanrumste, Steven Delputte, Peter Van Hese, Sara Asseondi, Yves D'Asseler, Ignace Lemahieu</i>	
Neural Basis For Cortical-Network Responses To TV Spots: a High Resolution EEG study	55
<i>Fabrizio De Vico Fallania, Fabio Babilonib, Febo Cincotti, Donatella Mattia, Andrea Tocci, Luigi Bianchi, Serenella Salinarid, Maria Grazia Marciiani, Ramon Soranzo, Alfredo Colosimo, Laura Astolfi</i>	
Magnetic Imaging of Nanoparticles Using Minimum Norm Algorithms.....	56
<i>Daniel Baumgarten, Mario Liehr, Jens Haueisen</i>	
Dipole Sources Localization of MRPs using ICA and Cortical Dipole Layer Imaging	59
<i>Junichi Hori, Naotoshi Aoki</i>	
Current Distributions Inside 3D Abdomen Models as Obtained by Electrical and Magnetic Stimulations for the Treatment of Urinary Incontinence.....	63
<i>Masato Odagaki, Yoshio Uomori, Hidehiro Hosaka</i>	

Table of Contents

Buddhist Meditation: An fMRI Study	67
<i>Chao-Hsien Hsieh, Chien-Hui Liou, Chang-Wei Hsieh, Pai-Feng Yang, Chi-Hong Wang, Li-Kang Ho, Jyh-Horng Chen</i>	
More normal EEGs of depression patients during mental arithmetic than rest	69
<i>Yang Li, Yingjie Li, Shanbao Tong, Yingying Tang, Yisheng Zhu</i>	
High-resolution spatio-temporal neuronal activation in the visual oddball task: a simultaneous EEG/fMRI study	73
<i>L. Marzetti, D. Mantini, S. Cugini, G.L. Romani, C. Del Gratta</i>	
Unbiased large-scale coherence mapping for simultaneously acquired EEG and fMRI data	77
<i>L. Marzetti, G. Nolte, M.G. Perrucci, G.L. Romani, C. Del Gratta</i>	
Simultaneous Tracking of Multiple Brains Activity with High Resolution EEG Hyperscannings	81
<i>F. Babiloni, F. Cincotti, D. Mattia, F. De Vico Fallani, A. Tocci, L. Bianchi, S. Salinari, M.G. Marciiani, A. Colosimo, L. Astolfi</i>	
Using Numerical Model to Predict Hydrocephalus Based on MRI Images	85
<i>Xiaobin Shen, Guillermo Narsilio, Hongxin Wang, David Smith, Gary Egan</i>	
A Fast Volume Conductor Segmentation and Modeling Pipeline for NICE	89
<i>Bernhard Pfeifer, Michael Seger, Gerald Fischer, Claudia-Nike Nowak, Johannes Aschaber, Bernhard Tilg</i>	
Simultaneous Evoked Potentials-fMRI acquisition in the rat	93
<i>Pai-Feng Yang, Jyh-Horng Chen</i>	
Fusion of EEG and fMRI for the investigation of functional connectivity during a visual oddball task	96
<i>Dante Mantini, Simone Cugini, Gian Luca Romani, Cosimo Del Gratta</i>	
Effects of anisotropy in a physical torso phantom on source reconstructions from a current dipole	100
<i>Mario Liehr, Gökhan Sengül, Ugur Baysal, Jens Hauelsen</i>	
Neural Correlates of Mindfulness and Concentration in Buddhist Monks: A fMRI study	104
<i>Antonino Raffone, Antonietta Manna, Gianni Mauro Perrucci, Antonio Ferretti, Cosimo Del Gratta, Marta Olivetti Belardinelli, Gian Luca Romani</i>	
Advanced Neuroimaging Approaches of Magnetic Resonance for Brain Function Research	107
<i>Wei Chen</i>	
Separative Surface Potential Activation Beamformer for Localizing Reentrant Excitation of Atrial Fibrillation	109
<i>Kiwoong Kim, Doosang Kim, Eun-Bo Shim, Yong-Ho Lee, Hyukchan Kwon, Yong-Ki Park</i>	
Estimation of Time-varying Cortical Connectivity During the Intention of Movement in Spinal Cord Injured Patients	113
<i>L. Astolfi, D. Mattia, F. Cincotti, F. De Vico Fallani, A. Tocci, A. Colosimo, S. Salinari, M.G. Marciiani, S.Gao, H. Witte, F. Babiloni</i>	
Adaptive Spatial Filter and Adaptive Inverse Modeling for Electromagnetic Source Imaging	117
<i>Kensuke Sekihara, Kenneth E. Hild II, Sarang S. Dalal, Johanna M. Timer, David Wipf, Hagai T. Attias, Srikantan S. Nagarajan</i>	
Using Principal Component Analysis to Detect the Wavefront of Cortical Spreading Depression	119
<i>Sahwa Saleh, Shangbin Chen, Dong Chen</i>	
Measurements of EEG Evoked by Transcranial Magnetic Stimulation at Various Stimulus Points on the Head	123
<i>Takeshi Arimatsu, Hideyuki Sato, Sheng Ge, Shoogo Ueno, Keiji Iramina</i>	
An ERP Study of Face Expression	127
<i>Yufang Wei, Guizhi Xu, Yang Song, Lei Wang, Shuo Yang</i>	

Table of Contents

Low Dimensional Representations of MEG/EEG Data Using Laplacian Eigenmaps	131
<i>Alexandre Gramfort, Maureen Clerc</i>	
Contributions of Epi-, Endo- and Myocardium to the Body Surface Potential	135
<i>Bernhard Pfeifer, Michael Seger, Robert Modre-Osprian, Christoph Hintermüller, Dieter Hayn, Günter Schreier, Bernhard Tilg</i>	
CONDUCTIVITY ESTIMATION FOR EEG :WHAT IS RELEVANT ?	139
<i>Sylvain Vallaghe, Maureen Clerc</i>	
Medical Image Segmentation: Methods and Software.....	143
<i>D.J. Withey, Z.J. Koles</i>	
Inverse Problem of Inductive Magnetic Resonance Electrical Impedance Tomography.....	147
<i>Guoqiang Liu, Meng Meng, Hao Wang, Lingtong Jiang, Shiqiang Li</i>	
Inverse Problem of Magnetoacoustic Tomography with Magnetic Induction	150
<i>Hao Wang, Guo qiang Liu, Lingtong Jiang, Shiqiang Li</i>	
Evaluating the Accuracy of an Anisotropic Finite-Volume Head Model for the EEG Forward Problem	153
<i>Michael J. D. Cook, Zoltan J. Koles</i>	
Multichannel MCG Systems with Optimum Combinations of Pickup Coils and Shielded Rooms.....	157
<i>Y. H. Lee, K. K. Yu, K. Kim, J. M. Kim, C. S. Kang, H. Kwon, H. K. Lim, Y. K. Park</i>	
Conductivity Imaging of Postmortem and In-vivo Canine Brains using MREIT.....	161
<i>Eung Je Woo, Hyung Joong Kim, Byung Il Lee, Soo Yeol Lee, Jin Keun Seo, Hee Myung Park</i>	
Equivalent Isotropic Conductivity Image Reconstruction in MREIT	165
<i>Jin Keun Seo, Byung Il Lee, Eung Je Woo</i>	
Effect of Magnetic Stimulation at SHENMEN Point on the Electroencephalogram.....	169
<i>Shuo Yang, Guizhi Xu, Lei Wang, Yaohua Geng, Xiu Zhang, Qingxin Yang, Weili Yan</i>	
Research on Event Related Potential Elicited by Number Recognizing and Arithmetic Calculating.....	173
<i>Lei Wang, Guizhi Xu, Shuo Yang, Yang Song, Yufang Wei, Weili Yan</i>	
Imaging Adult Zebrafish Brain Structures Using Micro-fabricated RF Coil on 3T MRI System	177
<i>Meng-Chi Hsieh, Li-Wei Kuo, Edzer Wu, Jyh-Horng Chen</i>	
Dynamic Contrast Enhanced Imaging of Mice Kidney Metabolism Using High-Temperature Superconducting RF Coil on a 3T MRI System.....	180
<i>Kai-Yuan Chen, Li-Wei Kuo, Wei-Ting Lin, Chia-Hao Su, Jyh-Horng Chen</i>	
Comparing The Spatial and Temporal Reproducibility of Brain Activation Using Three fMRI Techniques: BOLD, FAIR, and VASO.....	183
<i>Chia-Wei Lee, Der-Yow Chen, Chang-Wei Wu, Jyh-Horng Chen</i>	
Probabilistic Anatomical Connection Derived from QBI with MFACT Approach	187
<i>Yi-Ping Chao, Chia-Yen Yang, Kuan-Hung Cho, Chun-Hung Yeh, Kun-Hsien Chou, Jyh-Horng Chen, Ching-Po Lin</i>	
The Construction of a Chinese Brain MRI Template.....	191
<i>Edzer L. Wu, Der You Chen, Jyh-Horng Chen</i>	
From where to how: assessing mechanisms of neural plasticity in patients with unilateral brain lesions.....	194
<i>P. Belardinelli, L. Ciancetta, M. Staudt, V. Pizzella, A. Londei, N. Birbaumer, G. Romani, C. Braun</i>	
Power map during painful and nonpainful stimulation using beamformer technique	197
<i>R. Franciotti, L. Ciancetta, S. Della Penna, P. Belardinelli, V. Pizzella, G.L. Romani</i>	
An Active Noise Cancellation System for fMRI.....	200
<i>Kuan-Hung Cho, Tzi-Dar Chiueh, Ching-Po Lin, Casper K. Chen, Jyh-Horng Chen</i>	

Table of Contents

Effect of Electrical Stimulus Intensity to Hemodynamic Responses of Somatosensory cortex.....	203
<i>Hirotsugu Takata, Mingdi Xu, Takehito Hayami, Keiji Iramina</i>	
Evaluation of BOLD Sensitivity Using a Realistic MRI Simulator	206
<i>Ali-Reza Mohammadi-Nejad, G.-Ali Hossein-Zadeh, Hamid Soltanian-Zadeh</i>	
An Event-related Analysis for Identifying Networks Integrated by P300 Simultaneously Measured with EEG and fMRI.....	210
<i>Li-qun Wang</i>	
The Application of Single- and Multi-Level Fast Evolution Strategies for the Reconstruction of Multiple Neuromagnetic Sources.....	213
<i>Roland Eichardt, Jens Haueisen, Thomas R. Knösche, Ernst G. Schukat-Talamazzini</i>	
Influence of anisotropic conductivity on the EEG forward and inverse solution	217
<i>Daniel Güllmar, Jürgen R. Reichenbach, Jens Haueisen</i>	
The impact of uncertain spike identification in event related EEG-fMRI in epilepsy.....	220
<i>G.J. Huiskamp, M. Hersevoort, M. Zijlmans, F. Leijten</i>	
Heart Rate Variability Analysis of Ischemic and Heart Rate Related ST-segment Deviation Episodes Based on Time-frequency Method	223
<i>WANG Xing, XU Liang, SUN Zhongwei, YANG Zibin, PENG Yi</i>	
Spatiotemporal Profiles of Brain Activation During Learning and Strategy Formulation	226
<i>George Zouridakis, Farhan Baluch, Ian Stevenson, Devika Subramanian</i>	
Influence of low-frequency rTMS on EEG of epileptic rats.....	230
<i>Zhang Guanghao, Li Linxia, Huo Xiaolin, Song Tao</i>	
EM ALGORITHMS FOR GENERALIZING MCE AND FOCUSS.....	233
<i>David Wipf, Kensuke Sekihara, Srikantan Nagarajan</i>	
Automated neonatal spike train detection as part of a neonatal seizure detection system.....	237
<i>W. Deburchgraeve, P.J. Cherian, M. De Vos, R.M. Swarte, J.H. Blok, G.H. Visser, P. Govaert, S. Van Huffel</i>	
Canonical Decomposition of scalp EEG as preprocessing for source localisation.	241
<i>Maarten De Vos, Lieven De Lathauwer, Bart Vanrumste, Wouter Deburchgraeve, Sabine Van Huffel, Wim Van Paesschen</i>	
Analysis of Vector-ECG and Magneto-ECG Based on MCG Data.....	245
<i>QINGWEN GU, SHIQIN JIANG, WEIYUAN WANG, WEIWEI QUAN</i>	
A Comparison of Several Phase Unwrapping Methods in MREIT.....	249
<i>Yuyu Wang, Huixian Wang, Wenhui Yang, Tao Song</i>	
Biomedical application of high sensitive synchrotron X-ray imaging techniques to assess the microstructures and function of hamster heart	253
<i>Jin Wu, Tohoru Takeda, Thet Thet Lwin, Tetsuya Yuasa, Manabu Minami, Takao Akatsuka</i>	
Source Inversion Technique using Bayesian Inference: Combined MEG/fMRI.....	257
<i>Sung C. Jun, John S. George, Woohan Kim, Sergey M. Plis, Doug M. Ranken, David M. Schmidt</i>	
A Flexible Multichannel Electrode for Mouse Brain and Its Application to Mouse EEG	261
<i>Jee Hyun Choi, Minah Lee, Jong-ho Kim, Hee-Sup Shin</i>	
The Empirical Type I Error of Dynamic Statistical Parameter Mapping Estimates	263
<i>Richard E. Frye</i>	
Online Detection of Gamma Oscillations in Ongoing Intracerebral Recordings: From Functional Mapping to Brain Computer Interfaces.....	267
<i>K. Jerbi, O. Bertrand, B. Schoendorff, D. Hoffmann, L. Minotti, P. Kahane, A. Berthoz, J-P. Lachaux</i>	
Imaging Three-Dimensional Ventricular Activation Sequence under Dual-site Pacing in a Rabbit Model.....	271
<i>C. Han, Z. Liu, C. Liu, S. Pogwizd, B. He</i>	

Table of Contents

Noninvasive Bioimpedance Imaging by Means of Current Reconstruction Magnetic Resonance Electrical Impedance Tomography	273
<i>Nuo Gao, Bin He</i>	
Dipole Estimation Errors Due to Skull Conductivity Perturbations: Simulation Study in Spherical Head Models.....	275
<i>F. Chen, H. Hallez, P. Van Hese, Y. D'Asseler, I. Lemahieu</i>	
Feasibility Study of Radio Frequency Current Density Imaging with Only One Rotation.....	279
<i>Dinghui Wang, Weijing Ma, Tim P. DeMonte, Adrian I. Nachman, Michael L. Joy</i>	
A Cortical Potential Imaging Analysis of Mu Rhythm during On-line Control of Brain-Computer Interface.....	283
<i>Han Yuan, Bin He</i>	
Cortical Imaging of Sensorimotor Rhythm during Online Control of Brain-computer Interface.....	287
<i>Han Yuan, Alexander J Doud, Arvind Gururajan, Bin He</i>	
Magnetically induced magnetoacoustic generation and conductivity reconstruction for a multi-layer cylindrical model.....	290
<i>Qingyu Ma, Bin He</i>	
Magnetoacoustic Tomography of Biological Tissue with Magnetic Induction.....	292
<i>Rongmin Xia, Xu Li, Bin He</i>	
A Study of White Matter Anisotropic Conductivity on EEG Forward Solutions.....	293
<i>Jing Li, Kun Wang, Shanan Zhu, Bryon Mueller, Kelvin Lim, Zhongming Liu, Bin He</i>	
Mapping and Tracking the Flow of Brain Activations using MEG/EEG: Hypothesis and Methods.....	296
<i>Julien Lefèvre, Sylvain Baillet</i>	
A MEG MULTIREOLUTION MODEL SELECTION PROCEDURE REVEALS THE CORTICAL SOMATOTOPY OF HAND-FINGERS	300
<i>Benoit Cottureau, Karim Jerbi, Sylvain Baillet</i>	
Noise Analysis of Current Density Imaging: A Pilot Study	304
<i>Xiaotong Zhang, Xingyao Yan, Dandan Yan, Minming Zhang, Fei Sun, Shanan Zhu, Bin He</i>	
Finite Element Modeling of Human Head from Medical Images.....	308
<i>Jun Liu, Shanan Zhu, Bin He</i>	
MEG-EEG-fMRI: What can be gained in the Study of the Brain with a Multimodal Approach.....	311
<i>Cosimo Del Gratta, Marcella Brunetti, Dante Mantini, Gian Luca Romani</i>	
Learning, Prediction, and the Neural Control of Behavior.....	317
<i>Ovidiu V. Lungu, Tao Liu, Tobias Waechter, Daniel T. Willingham, James Ashe</i>	
Comparison of Meshless FEM and Conventional FEM for Solving ECG Forward Problem: A Simulation Study	319
<i>Zhongshi Li, Yingchun Zhang, Shanan Zhu, Bin He</i>	
Design of anisotropic phantoms for use in electrical conductivity imaging and modeling.....	321
<i>Rosalind J. Sadleir</i>	
Brain Tissue Conductivity Reconstruction Based on Diffusion Tensor Magnetic Resonance Imaging: A Simulation Study.....	325
<i>Dandan Yan, Xiaotong Zhang, Nuo Gao, Shanan Zhu, Bryon Mueller, Kelvin Lim, Zhongming Liu, Bin He</i>	
Comparison of Hemodynamic Response Models in a Combined EEG-fMRI Study of an Epileptic Patient	328
<i>Todd J.M. Penney, Bradley Goodyear, Daniel Pittman, Paolo Federico, Zoltan J. Koles</i>	
Noninvasive functional imaging of the heart using MRI: opportunities and challenges.....	332
<i>Yi Wang, Thanh D. Nguyen, Pascal Spincemaille, Matthew D. Cham, Martin R. Prince, Jonathan W. Weinsaft</i>	

Table of Contents

A New Algorithm to Extract the Anisotropic Conductivity Distribution of White Matter from DT-MRI	337
<i>Kun Wang, Jing Li, Shanan Zhu, Bryon Mueller, Kelvin Lim, Zhongming Liu, Bin He</i>	
Whole-heart Modeling and Computer Simulation for Electrophysiology Study	340
<i>Daming Wei</i>	
Sparse Source Imaging in EEG	342
<i>Lei Ding, Bin He</i>	
Recent Development of Magnetic Resonance Electrical Impedance Tomography toward High-Resolution Conductivity Imaging	346
<i>Eung Je Woo</i>	
Imaging Human Head Conductivity Distribution by Means of MREIT	350
<i>Dandan Yan, Xiaotong Zhang, Nuo Gao, Shanan Zhu, Bin He</i>	
Head Modeling for E/MEG Source Analysis: Image Segmentation, Domain Decomposition and Solution of the Forward Problem	354
<i>Zoltan J. Koles</i>	
Spatiotemporal Imaging with Partially Separable Functions.....	356
<i>Zhi-Pei Liang</i>	
Neural Architecture Revealed by High Temperature Superconducting MR Imaging.....	358
<i>Jyh-Horng Chen</i>	
Adaptive Wiener filter formulation on the fMRI-EEG integrated spatiotemporal neuroimaging	359
<i>Zhongming Liu, Bin He</i>	
The influence of forward model conductivities on EEG/MEG source reconstruction	362
<i>Jens Haueisen</i>	
A Simulation Study of Two Dimensional Magnetoacoustic Tomography with Magnetic Induction	364
<i>Xun Li, Xu Li, Shanan Zhu, Bin He</i>	
Electrophysiological Source Imaging of the Brain and Heart: Past, Present and Future.....	367
<i>Bin He</i>	
Noninvasive Imaging of Cardiac Electrical Function: Achievements, Pitfalls and Limitations	370
<i>Bernhard Tilg, Bernhard Pfeifer, Robert Modre, Michael Seger, Christoph Hintermüller, Gerald Fischer, Friedrich Hanser</i>	
EEG Default Mode Network in the Human Brain: Spectral Field Power, Coherence Topology, and Current Source Imaging	374
<i>Andrew CN Chen</i>	