

Contents

Preface v

List of Contributors ix

Section I: Magnetic and Electric Field Source Localization

- Methods to Estimate Spatial Properties of Dynamic Cortical Source Activity
P. L. Nunez 3
- Recent Developments in Neuromagnetism: Implications for Imaging
L. Kaufman and S. J. Williamson 11
- The Influence of Various Head Models on EEGs and MEGs
J. W. H. Meijs, B. J. ten Voorde, M. J. Peters, C. J. Stok, F. H. Lopes da Silva 31
- Functional Localization by Topographic Magnetic Brain Mapping
G. L. Romani 47
- Evoked Magnetic Fields in the Study of Somatosensory Cortical Areas
J. Huttunen 61
- Source Localization of Human Brain Potentials Estimated by the Dipole-Tracing Method
S. Homma, Y. Nakajima, S. Watanabe, H. Kamoshita, Y. Kawashima 71
- Topography and Model Analysis of Auditory Evoked Potentials: Tonotopic Aspects
O. Bertrand, F. Perrin, J. F. Echallier, J. Pernier 75
- An Interaction of Cortical Sources Associated with Simultaneous Auditory and Somesthetic Stimulation
H. Weinberg, D. O. Cheyne, P. Brickett, R. Harrop, R. Gordon 83
- Source Estimation of Scalp EEG Focus
P. K. H. Wong and H. Weinberg 89

Section II: Analysis of Functional Topography

- Functional Topography of the Human Brain
A. S. Gevins and S. L. Bressler 99
- ERD Mapping and Functional Topography: Temporal and Spatial Aspects
G. Pfurtscheller, J. Steffan, H. Maresch 117
- ERD Mapping and Long-Term Memory: The Temporal and Topographical Pattern of Cortical Activation
W. Klimesch, G. Pfurtscheller, W. Mohl 131
- Noninvasive Mapping of Motor-Evoked Potentials in Humans
L. G. Cohen and M. Hallett 143

Section III: Brain Electrical Activity Mapping

- Issues Facing the Clinical Use of Brain Electrical Activity Mapping
F. H. Duffy 149
- Sex Differences in the Ongoing EEG: Probability Mapping at Rest and during Cognitive Tasks
H. Petsche, P. Rappelsberger, H. Pockberger 161
- A Pharmacological Model of "Local Cerebral Activation": EEG Cartography of Caffeine Effects in Normals
P. Etevenon, P. Peron-Magnan, S. Guillou, M. Toussaint, B. Gueguen, P. Deniker, H. Loo, E. Zarifian 171
- Topographical Mapping of Electrocortical Activity in Schizophrenia during Directed Nonfocussed Attention, Recognition Memory and Motor Programming
J. Gruzelier, D. Liddiard, L. Davis, L. Wilson 181

vii

Topographic Mapping of Auditory Evoked P300 in Psychiatric Disorders <i>K. Maurer, T. Dierks, R. Ihl</i>	187	Comparison of Positron Emission Tomography and Electroencephalography as Measures of Cerebral Function in Epilepsy <i>J. Engel, Jr.</i>	229
Pattern Differences in Two-Dimensional EEG Maps During Mental Calculation <i>J. Tatsuno</i>	193	Quantitative EEG and Positron Emission Tomography in Brain Ischemia <i>K. Nagata, K. Tagawa, S. Hiroi, M. Nara, F. Shishido, K. Uemura</i>	239
<hr/> Section IV: PET and SPECT Imaging and Bioelectrical Activity <hr/>			
Positron Emission Tomographic Studies of Aging and Dementia <i>K. L. Leenders</i>	201	Joint Bereitschaftspotential and SPECT Application in the Functional Mapping of Learning-Related Brain Activity and Imagery <i>W. Lang, M. Lang, I. Podreka, G. Goldenberg, L. Deecke</i>	251
Quantitative Measurements of Brain Metabolism During Physiological Stimulation <i>P. E. Roland and L. Widen</i>	213	Subject Index	261