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Altri autori (Persone)	UlmerStephan JansenOlav
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Nota di contenuto	Contents; Part I : Basics; 1: Introduction; 2: Neuroanatomy and Cortical Landmarks; 2.1 Neuroanatomy and Cortical Landmarks of Functional Areas; 2.1.1 Sensorimotor Cortex; 2.1.1.1 Transverse Sections; 2.1.1.2 Sagittal Sections; 2.1.2 The Insula; 2.1.2.1 Sagittal Sections; 2.1.2.2 Transverse Sections; 2.1.3 Speech-Associated Frontal Areas; 2.1.3.1 Transverse Sections; 2.1.3.2 Sagittal Sections; 2.1.4 Auditory Cortex and Speech-Associated Temporoparietal Areas; 2.1.4.1 Transverse Sections; 2.1.4.2 Sagittal Sections; 2.1.4.3 Coronal Sections; 2.1.5 Visual Cortex; 2.1.5.1 Sagittal Sections References3: Spatial Resolution of fMRI Techniques; 3.1 Introduction; 3.2 Vascular Structure and Hemodynamic Response; 3.3 Spatial Resolution of BOLD fMRI; 3.4 Perfusion-Based fMRI Approaches; References; 4: The Electrophysiological Background of the fMRI Signal; 4.1 Introduction; 4.2 The Compound Neural Signal; 4.3 The Passive Electric Properties of the Brain; 4.4 The Neural Correlate of the BOLD Signal; 4.5 The Coupling of Synaptic Activity and CBF; 4.6 Conclusions; References; 5: High-Field fMRI; 5.1 Introduction; 5.2 Benefits and Limitations of High- and Ultra-High-Field MRI 5.3 Special Aspects of High-Field fMRI5.4 Ultra-High-Field fMRI: Recent Neurocognitive Studies; 5.5 Ultra-High-Field fMRI and Possible Clinical Applications; References; 6: fMRI Data Analysis Using SPM; 6.1

Sommario/riassunto

Since functional MRI (fMRI) and the basic method of BOLD imaging were introduced in 1993 by Seiji Ogawa, fMRI has evolved into an invaluable clinical tool for routine brain imaging, and there have been substantial improvements in both the imaging technique itself and the associated statistical analysis. This book provides a state of the art overview of fMRI and its use in clinical practice. Experts in the field share their knowledge and explain how to overcome diverse potential technical barriers and problems. Starting from the very basics on the origin of the BOLD signal, the book covers technical issues, anatomical landmarks, the full range of clinical applications, methods of statistical analysis, and special issues in various clinical fields. Comparisons are made with other brain mapping techniques, such as DTI, PET, TMS, EEG, and MEG, and their combined use with fMRI is also discussed. Since the first edition, original chapters have been updated and new chapters added, covering both novel aspects of analysis and further important clinical applications.