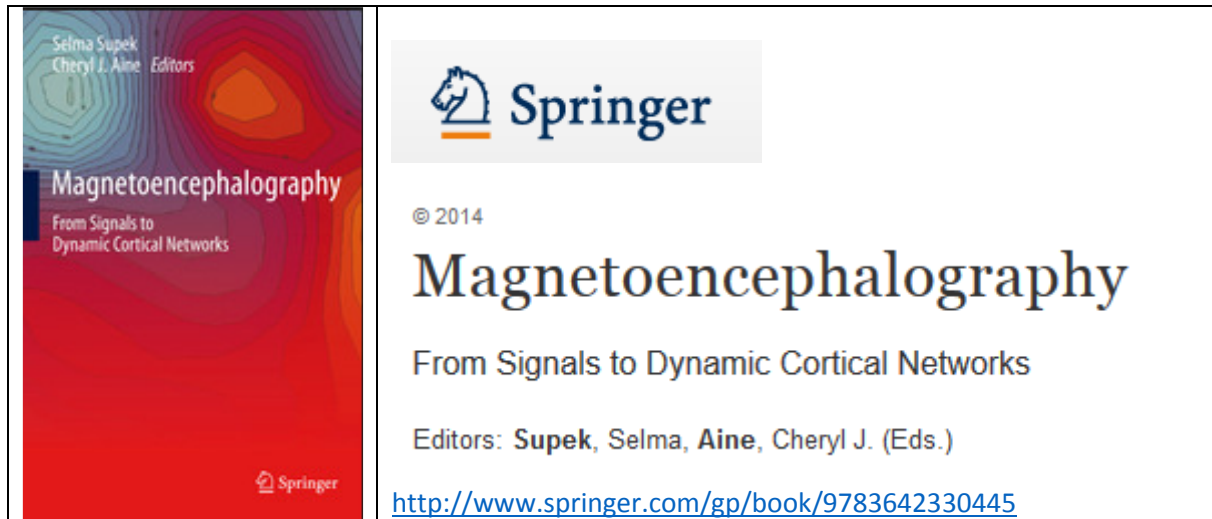


IUPESM 2018: MEG Tutorial – READING MATERIAL

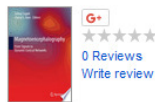
Selma Supek: Neurodynamic functional brain imaging using magnetoencephalography



A preview of most of the content of the handbook is available on

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Magnetoencephalography: From Signals to Dynamic Cortical Networks
edited by Selma Supek, Cheryl J. Aine

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Selection of Stimulus Parameters for Visual MEG Studies of Sensation and Cognition

Cheryl J. Aine, Selma Supek, Lori Sanfratello and Julia M. Stephen

Abstract Historically, MEG investigations of the visual system either attempted to: (1) corroborate findings from invasive monkey or basic psychophysical studies as an indirect way to validate MEG results or (2) enhance previously demonstrated clinical event-related potential findings (ERPs) (e.g., multiple sclerosis patients reveal longer ERP peak latencies). We focused on the former with the ultimate goal of developing/testing new stimulus paradigms and clinical applications for assessing cognitive functions such as working memory since several neuropsychiatric and neurological disorders such as schizophrenia and dementia reveal deficits in working memory circuits. However, characterization of neural circuits involved in disorders of the nervous system (i.e., neuromagnetic mapping of networks of regions and their temporal dynamics) presents a tremendous technical challenge. In this chapter we will discuss some of the technical issues we encountered while developing and testing paradigms for basic vision, attention and working memory, and will highlight ways to avoid some of these potential confounds. We will also briefly review the organization of the visual system to provide an overall appreciation for the intricacies of the visual system as well as providing some historical context for the manner in which certain studies have been designed.

Selected additional reading materials will be available

on a link that will be provided during the tutorial lecture.

Download will be possible during and after the IUPESM2018, till July 15, 2018.