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Autore	Rossi, Paola
Titolo	Francesco Maffei / Paola Rossi
Pubbl/distr/stampa	Milano : Berenice, 1991
Lingua di pubblicazione	Non definito
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Autore	Tyler Christopher W
Titolo	Neural Signal Estimation in the Human Brain
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Descrizione fisica	1 online resource (142 p.)
Collana	Frontiers Research Topics
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Sommario/riassunto	The ultimate goal of functional brain imaging is to provide optimal estimates of the neural signals flowing through the long-range and local pathways mediating all behavioral performance and conscious experience. In functional MRI (Magnetic Resonance Imaging), despite its impressive spatial resolution, this goal has been somewhat undermined by the fact that the fMRI response is essentially a blood-oxygenation level dependent (BOLD) signal that only indirectly reflects the nearby neural activity. The vast majority of fMRI studies restrict themselves to describing the details of these BOLD signals and deriving non-quantitative inferences about their implications for the underlying neural activity. This Frontiers Research Topic welcomed empirical and

theoretical contributions that focus on the explicit relationship of non-invasive brain imaging signals to the causative neural activity. The articles presented within this resulting eBook aim to both highlight the importance and improve the non-invasive estimation of neural signals in the human brain. To achieve this aim, the following issues are targeted: (1) The spatial limitations of source localization when using MEG/EEG. (2) The coupling of the BOLD signal to neural activity. Articles discuss how animal studies are fundamental in increasing our understanding of BOLD fMRI signals, analyze how non-neuronal cell types may contribute to the modulation of cerebral blood flow, and use modeling to improve our understanding of how local field potentials are linked to the BOLD signal. (3) The contribution of excitatory and inhibitory neuronal activity to the BOLD signal. (4) Assessment of neural connectivity through the use of resting state data, computational modeling and functional Diffusion Tensor Imaging (fDTI) approaches.