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Sommario/riassunto	Biophysical modelling of brain activity has had a long and illustrious history and has during the last few years profited from technological advances that allow obtaining neuroimaging data at an unprecedented spatiotemporal resolution. It is a very active area of research with applications ranging from the characterization of neurobiological and cognitive processes to constructing artificial brains in silico and building brain-machine interface and neuroprosthetic devices. The relevant community has always benefited from interdisciplinary interactions between different and seemingly distant fields ranging from mathematics and engineering to linguistics and psychology. This Research Topic aims to promote such interactions and we welcome all works related or that can contribute to an understanding of and construction of models for neural activity. The focus will be on biophysical models describing brain activity usually measured by fMRI or electrophysiology. Such models can be divided into two large classes: neural mass and neural field models. The main difference between these two classes is that field models prescribe how a quantity characterizing neural activity (such as average depolarization of a

neural population) evolves over both space and time as opposed to mass models which characterize the evolution of this quantity over time only and assume that all neurons of a population are located at (approximately) the same point. This Research Topic will focus on both classes of such models and discuss several of their aspects and relative merits focusing on the main ideas of neural field and mass theories that span from synapses to the whole brain, comparisons of their predictions with EEG and MEG spectra of spontaneous brain activity, evoked responses, seizures, and fitting to data to infer brain states and map physiological parameters. We welcome submissions shedding light on the underlying dynamics within the neural tissue that can yield explanations of disorders such as epilepsy and migraine as well as normal functions such as attention, working memory and decision making and encourage papers reporting new theoretical and/or modelling work as well as advances in experimental methods that can benefit modelling endeavours. The aim of this Research Topic is to provide a forum for state-of-the-art research in the field and foster new theoretical advances.