



Composite estimating functions and applications to imaging data

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Functionality-clustered imaging data refer to high-dimensional correlated brain activity measurements collected from EEG electrodes that are spatially clustered. Such data arise frequently from studies of infant growth and development. We develop a new model, imCopula, to characterize both large-scale variation and small-scale variation for EEG imaging data. To overcome challenges in the estimation and inference for the model parameters, we propose an efficient composite estimating equation approach, which enjoys computational feasibility. Several numerical examples from simulation studies and real data analysis will be presented to demonstrate the performance of the proposed models and estimation methods.

Keywords: copula; EEG imaging; generalized method of moments; spatial dependence.