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Multivariate Mixture Spatial Generalized Linear Mixed Models

Disease mapping has been widely studied with considering only one disease in the estimated models. Simultaneous modeling of related diseases can also be a valuable tool both from the epidemiological and from the statistical point of view. In particular, when we have several measurements recorded at each spatial location, we need to consider multivariate models in order to handle the dependence among the multivariate components as well as the spatial dependence between locations. In many circumstances, it is a very strong assumption to have the same underlying distribution for all regions of population study. In this talk, we consider the multivariate mixture spatial models for areal data for Normal and non-Normal responses in the class of generalized linear mixed models.