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Sparse mixture of regression models in high dimensional spaces

Recent advancements in medical and other fields of scientific research have allowed scientists to collect data of unprecedented size and complexity. A common statistical problem in such applications is to model a response variable of interest as a function of a small subset of available features (covariates). The problem becomes even more complex when the population under study is made up of subpopulations and the relationship between the response variable and the covariates varies across subpopulations. Mixture of regression models provide a flexible statistical tool in studying such relationships. In this talk we discuss some recent developments on estimation and feature selection problems in mixture of regression models with diverging number of parameters.