A generalized mixture model applied to diabetes incidence data

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Abstract

We present a generalization of the usual (independent) mixture model to accommodate a Markovian first-order mixing distribution. We propose the data-driven reversible jump, a Markov chain Monte Carlo (MCMC) procedure, for estimating the a posteriori probability for each model in a model selection procedure and estimating the corresponding parameters. Simulated data sets show excellent performance of the proposed method in the convergence, model selection and precision of parameters estimates. Finally, we apply the proposed method to analyze USA diabetes incidence data sets.

Keywords: Data-driven reversible jump; diabetes incidence; longitudinal data; mixture models.