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On Simulation of the Beta-Dirichlet Process

The beta-Dirichlet process was introduced by Kim, James and Weissbach (2012). They have used this process as a prior for Bayesian analysis of cumulative hazard functions associated with any multistate event history data analysis. We will propose two new methods for simulation from beta-Dirichlet process and use them for estimation of the cumulative hazard functions associated with multistate event history data analysis. The first method is based on the Indian Buffet Process and the second method is based on an approximation proposed by Al Labadi (2012). We will compare these two simulation schemes with one proposed by Kim, James and Weissbach (2012). The first method based on the Indian Buffet Process produces exact samples while the other methods produce approximate samples.