

Scale up Bayesian estimation for NHPP using **rstan**

Miao Cai miao.cai@slu.edu

2019-06-19

Simulation setting:

- $\beta = 2, \theta = 10$
- The number of simulations: $N = 3,000$
- The number of shifts in each simulation: 5, 25, 50, 100, 250, 500, 750, 1000

Table 1: Summary results for parameter β (N simulation = 3000)

number of shifts	mean of the posterior means	s.d. of the posterior means	mean of the posterior s.e.
5	2.032	0.270	0.272
25	2.007	0.116	0.119
50	2.005	0.085	0.083
100	2.003	0.059	0.059
250	2.002	0.037	0.037
500	2.001	0.026	0.026
750	2.001	0.022	0.022
1000	2.001	0.019	0.019

Table 2: Summary results for parameter θ (N simulation = 3000)

number of shifts	mean of the posterior means	s.d. of the posterior means	mean of the posterior s.e.
5	10.140	1.665	1.728
25	10.027	0.759	0.778
50	10.024	0.542	0.550
100	10.018	0.388	0.390
250	10.012	0.246	0.247
500	10.006	0.170	0.174
750	10.004	0.142	0.143
1000	10.004	0.122	0.124