

Additional simulation studies

Two more simulation studies, study 3 and study 4, are conducted. They are the same as study 2 (Section 4.2) except for two changes. First, the true prior π for simulation study 3 is

$$\pi = 0.8N(-0.2, 0.2^2) + 0.1N(-5, 1) + 0.1N(5, 1),$$

which differs from the working prior (2.3) in that the point mass at 0, δ_0 , is replaced by $N(-0.2, 0.2^2)$.

The true prior for simulation study 4 is

$$\pi = 0.8\delta_0 + 0.05N(-5, 0.5^2) + 0.05N(-3, 0.5^2) + 0.05N(5, 0.5^2) + 0.05N(3, 0.5^2),$$

which is mixture of 5 components instead of 3 components as in working prior (2.3). Second, only the empirical Bayes (method 1) and the rank-conditioned (method 3) are included for comparison because the nonparametric DP Bayes (method 2) is exceedingly computationally intensive. The result is given in Figure 5 for simulation 3 and Figure 6 for simulation 4. For both studies, the rank-conditional method beats the empirical Bayes in having lower mean square errors. The actual coverage rates for many $\theta_{[j]}$ on the right panel are higher than the nominal 90% because the working prior is more diffuse for these parameters than the true prior.

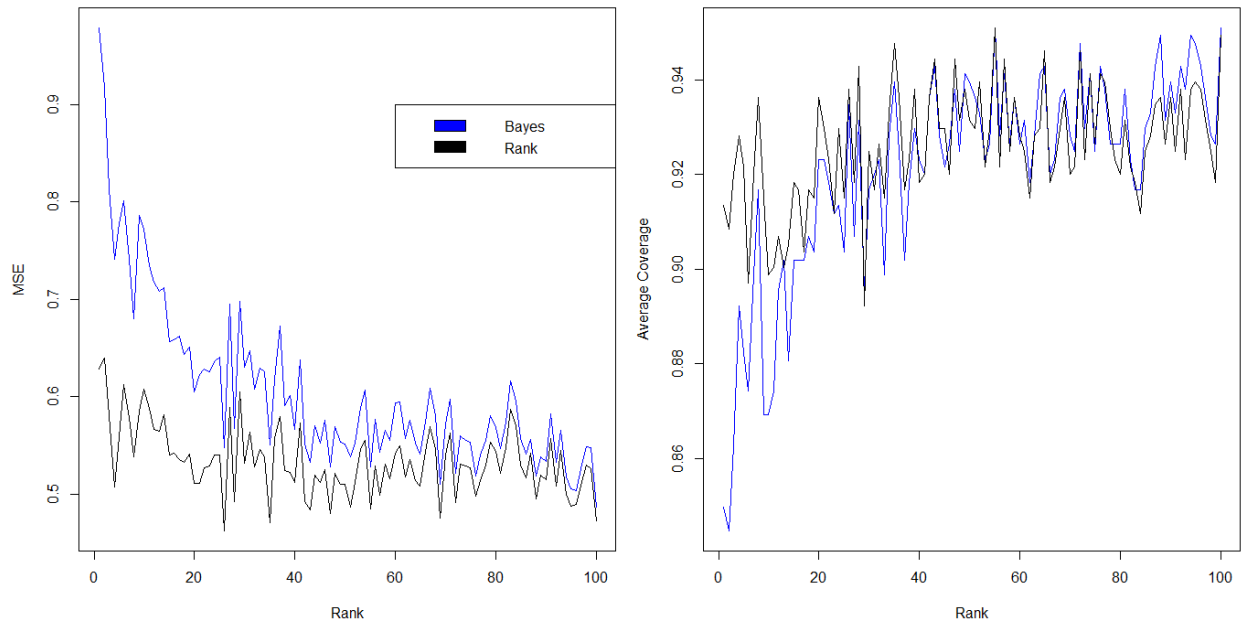


Figure 5. Simulation study 3.

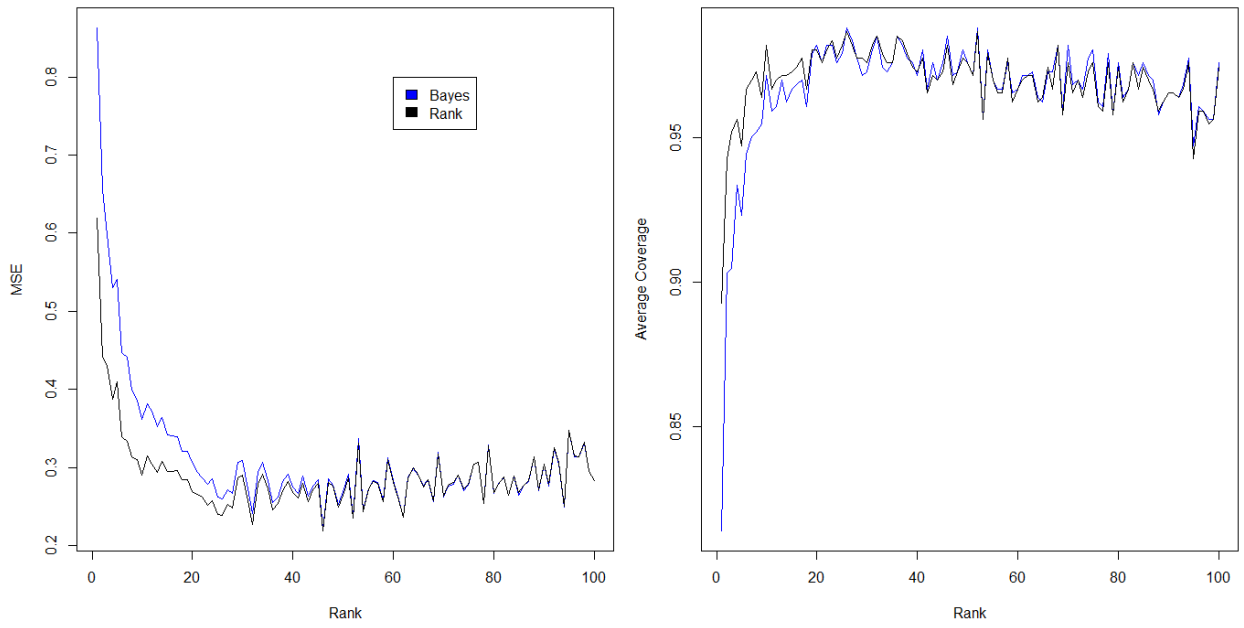


Figure 6. Simulation study 4.