Errata

Publication I

On page 2, Eq. (5), the 4th equation should be

$$\mathbf{G}_k = \mathbf{D}_{k+1} \left[\mathbf{P}_{k+1|k}^{-1}\right]$$

and the 6th equation should be

$$\mathbf{P}_{k|T} = \mathbf{P}_{k|k} + \mathbf{G}_k \left(\mathbf{P}_{k+1|T} - \mathbf{P}_{k+1|k}\right) \mathbf{G}_k^{\mathsf{T}}.$$

These errors occur only in the text, not in the implementation of the experiments.

Publication III

There was a programming mistake in Newton's method for fitting the Laplace approximation. Fig. 1 on p. 798 should be replaced with Figure E.1 of this Errata.

In addition, the number of particles was varied from 100 to $20,000$ instead of from $1,000$ to $20,000$.

The conclusion mostly stands, that is, the Laplace approximation based particle filter tends to underestimate the test quantity compared to the batch MCMC estimate, althought there is an outlier in the split-Gaussian results at around $16,000$ particles.

Publication IV

In Section 3, p. 485, the sentence *Then, a standard multivariate Gaussian ε is drawn and each component of ε is scaled by the scaling factors* $\mathrm{q}_i, \mathrm{r}_i$ *to*

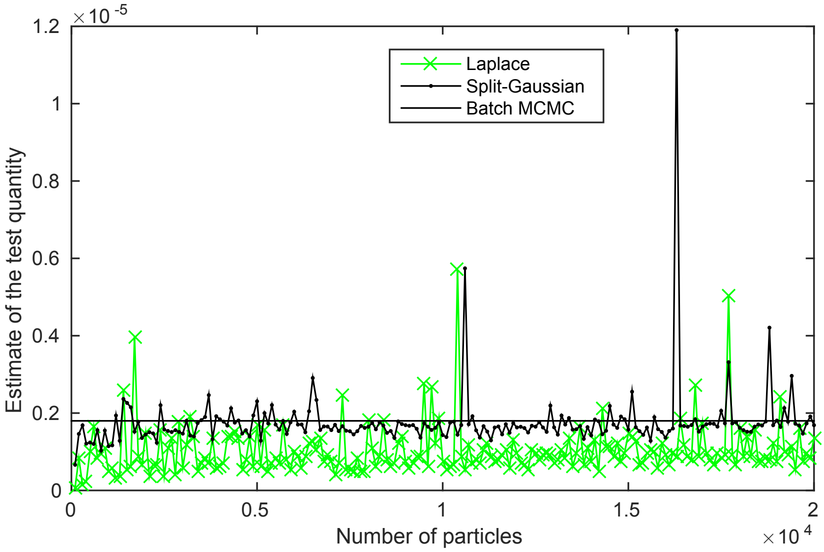

Figure E.1. Fourth central moment of $\exp(-\beta_2^\mathsf{T} x_2)$ estimated with Laplace and split-Gaussian particle filters, varying the number of particles from 100 to 20, 000. The black horizontal line is the MCMC estimate of the same quantity. Note that the MCMC estimate is shown only for comparison and it is obtained from a single run, that is, it is not a function of the number of particles.

form a split-Gaussian random variable η is unclear. For each component, one randomly decides whether i) the component is positive and $\mathbf{q}_i$ is used or ii) the component is negative and $\mathbf{r}_i$ is used. This is correctly explained in the pseudocode in Algorithm 1 (p. 486).

Publication V

On page 13, Eq. (58), the last term on the second line is missing a factor $\mathbf{Q}^{-1}$ inside the trace, i.e., it should read

$$\frac{\mathrm{d}\mathcal{Q}}{\mathrm{d}\mathbf{A}} \operatorname{tr}(\mathbf{Q}^{-1}\,\mathbf{A}\,\mathbf{\Phi}\,\mathbf{A}^\mathsf{T})$$

instead of

$$\frac{\mathrm{d}\mathcal{Q}}{\mathrm{d}\mathbf{A}} \operatorname{tr}(\mathbf{A}\,\mathbf{\Phi}\,\mathbf{A}^\mathsf{T}).$$