Supplementary Material for *"Unbiased and Consistent Nested Sampling via Sequential Monte Carlo"*

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1. INFERENCE RESULTS

We present posterior expectation and quantile results from 100 runs, $N = 4 \cdot 10^3$ for TA–SMC and $N = 10^3$ for NS–SMC for the Factor Analysis and ODE examples.

In brackets we report the ratio of (sample variance $\times$ average number of evaluations of $\mathcal{L}$) for the associated method to that of TA–SMC with the Random Walk Sampler. Thus, lower values indicate lower work–normalized variance.

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Table 1: Results for FA1 — Part 1 of 2

			$\widehat{\text{mean}}$	$\widehat{\text{lower}}$	$\widehat{\text{upper}}$
$\log \Lambda_{11}$	Gold standard		-0.23	-0.46	0.01
	TA–SMC	RW	$-0.23(1.0)$	$-0.47(1.0)$	0.01(1.0)
		MALA	$-0.23(0.2)$	$-0.46(0.3)$	0.01(0.4)
		SLICE	$-0.23(4.5)$	$-0.47(1.4)$	0.01(2.1)
	NS–SMC	RW	$-0.23(1.3)$	$-0.47(0.5)$	0.01(1.1)
		MALA	$-0.24(3.7)$	$-0.47(1.3)$	0.01(2.2)
		SLICE	$-0.23(3.2)$	$-0.47(1.2)$	0.01(1.7)
$\log \Lambda_{22}$	Gold standard		-0.25	-0.48	-0.00
	TA–SMC	RW	$-0.25(1.0)$	$-0.48(1.0)$	$-0.00(1.0)$
		MALA	$-0.25(0.2)$	$-0.48(0.3)$	$-0.00(0.2)$
		SLICE	$-0.25(3.4)$	$-0.48(1.3)$	$-0.00(1.3)$
	NS–SMC	RW	$-0.24(1.3)$	$-0.48(0.7)$	$-0.00(0.7)$
		MALA	$-0.25(1.7)$	$-0.48(1.0)$	$-0.01(1.0)$
		SLICE	$-0.25(4.6)$	$-0.48(1.2)$	$-0.00(1.5)$
$\log \Lambda_{33}$	Gold standard		-0.43	-0.66	-0.19
	TA–SMC	RW	$-0.43(1.0)$	$-0.66(1.0)$	$-0.18(1.0)$
		MALA	$-0.43(0.2)$	$-0.66(0.3)$	$-0.18(0.2)$
		SLICE	$-0.43(3.0)$	$-0.66(1.6)$	$-0.18(1.5)$
	NS–SMC	RW	$-0.43(1.0)$	$-0.66(0.6)$	$-0.19(0.6)$
		MALA	$-0.43(3.7)$	$-0.66(1.7)$	$-0.19(1.2)$
		SLICE	$-0.43(4.0)$	$-0.66(1.4)$	$-0.18(1.7)$
$\log \Lambda_{44}$	Gold standard		-2.65	-3.51	-2.05
	TA–SMC	RW	$-2.65(1.0)$	$-3.51(1.0)$	$-2.04(1.0)$
		MALA	$-2.66(0.1)$	$-3.52(0.2)$	$-2.05(0.3)$
		SLICE	$-2.65(4.4)$	$-3.51(2.2)$	$-2.05(2.2)$
	NS–SMC	RW	$-2.66(1.2)$	$-3.52(0.9)$	$-2.05(0.7)$
		MALA	$-2.66(3.5)$	$-3.52(2.4)$	$-2.05(1.3)$
		SLICE	$-2.65(3.6)$	$-3.51(2.4)$	$-2.05(1.4)$
$\log \Lambda_{55}$	Gold standard		-1.45	-1.73	-1.17
	TA–SMC	RW	$-1.45(1.0)$	$-1.73(1.0)$	$-1.16(1.0)$
		MALA	$-1.45(0.2)$	$-1.73(0.4)$	$-1.16(0.3)$
		SLICE	$-1.45(3.1)$	$-1.73(1.8)$	$-1.16(1.9)$
	NS–SMC	RW	$-1.45(1.2)$	$-1.73(0.9)$	$-1.17(0.8)$
		MALA	$-1.45(2.6)$	$-1.73(1.7)$	$-1.16(1.1)$
		SLICE	$-1.45(3.4)$	$-1.73(1.9)$	$-1.16(1.4)$
$\log \Lambda_{66}$	Gold standard		-1.44	-1.73	-1.16
	TA–SMC	RW	$-1.43(1.0)$	$-1.72(1.0)$	$-1.15(1.0)$
		MALA	$-1.44(0.2)$	$-1.73(0.4)$	$-1.15(0.3)$
		SLICE	$-1.44(4.5)$	$-1.73(1.5)$	$-1.15(1.7)$
	NS–SMC	RW	$-1.44(1.5)$	$-1.73(1.0)$	$-1.15(0.8)$
		MALA	$-1.44(3.6)$	$-1.73(1.5)$	$-1.16(1.5)$
		SLICE	$-1.44(5.3)$	$-1.72(1.5)$	$-1.15(1.7)$

Table 2: Results for FA1 — Part 2 of 2

			$\widehat{\text{mean}}$	$\widehat{\text{lower}}$	$\widehat{\text{upper}}$
$\log \beta_{11}$	Gold standard		-0.81	-1.24	-0.48
	TA–SMC	RW	$-0.81(1.0)$	$-1.24(1.0)$	$-0.48(1.0)$
		MALA	$-0.81(0.2)$	$-1.23(0.3)$	$-0.48(0.3)$
		SLICE	$-0.81(4.1)$	$-1.23(2.5)$	$-0.48(2.0)$
	NS–SMC	RW	$-0.82(1.1)$	$-1.24(1.2)$	$-0.48(0.7)$
		MALA	$-0.81(3.2)$	$-1.23(2.3)$	$-0.48(1.3)$
		SLICE	$-0.81(4.2)$	$-1.24(2.5)$	$-0.48(1.3)$
β_{21}	Gold standard		0.46	0.30	0.63
	TA–SMC	RW	0.46(1.0)	0.30(1.0)	0.63(1.0)
		MALA	0.46(0.3)	0.30(0.3)	0.63(0.4)
		SLICE	0.46(3.4)	0.30(1.6)	0.63(2.1)
	NS–SMC	RW	0.46(1.8)	0.30(0.8)	0.63(1.0)
		MALA	0.46(3.6)	0.30(1.1)	0.63(1.5)
		SLICE	0.46(4.5)	0.30(1.3)	0.63(2.3)
β_{31}	Gold standard		0.59	0.44	0.75
	TA–SMC	RW	0.59(1.0)	0.44(1.0)	0.75(1.0)
		MALA	0.59(0.2)	0.44(0.3)	0.75(0.3)
		SLICE	0.59(4.9)	0.44(2.2)	0.75(2.2)
	NS–SMC	RW	0.59(1.6)	0.44(0.7)	0.75(1.2)
		MALA	0.59(4.1)	0.44(1.2)	0.75(2.0)
		SLICE	0.59(7.3)	0.44(2.0)	0.75(3.2)
β_{41}	Gold standard		0.97	0.86	1.10
	TA–SMC	RW	0.97(1.0)	0.85(1.0)	1.10(1.0)
		MALA	0.97(0.2)	0.86(0.4)	1.11(0.2)
		SLICE	0.97(5.7)	0.86(2.4)	1.10(1.9)
	NS–SMC	RW	0.97(1.3)	0.86(0.8)	1.10(0.7)
		MALA	0.97(3.2)	0.86(1.4)	1.11(1.3)
		SLICE	0.97(8.4)	0.86(2.9)	1.10(2.5)
β_{51}	Gold standard		0.88	0.76	1.02
	TA–SMC	RW	0.88(1.0)	0.76(1.0)	1.02(1.0)
		MALA	0.88(0.2)	0.76(0.3)	1.02(0.3)
		SLICE	0.88(6.3)	0.76(2.5)	1.02(1.8)
	NS–SMC	RW	0.88(1.7)	0.76(0.8)	1.02(0.9)
		MALA	0.88(2.7)	0.76(1.2)	1.02(1.6)
		SLICE	0.88(8.4)	0.76(2.4)	1.02(2.7)
β_{61}	Gold standard		0.88	0.76	1.02
	TA–SMC	RW	0.88(1.0)	0.75(1.0)	1.02(1.0)
		MALA	0.88(0.2)	0.75(0.4)	1.02(0.4)
		SLICE	0.88(5.2)	0.75(2.5)	1.02(2.3)
	NS–SMC	RW	0.88(1.2)	0.75(0.9)	1.02(0.8)
		MALA	0.88(3.3)	0.76(2.0)	1.02(1.4)
		SLICE	0.88(7.6)	0.75(2.7)	1.02(3.3)

Table 3: Results for FA2 — Part 1 of 3

			$\widehat{\text{mean}}$	$\widehat{\text{lower}}$	$\widehat{\text{upper}}$
$\log \Lambda_{11}$	Gold standard		−3.08	−4.41	−1.91
	TA–SMC	RW	−3.05(1.0)	−4.38(1.0)	−1.91(1.0)
		MALA	−3.07(0.3)	−4.39(0.3)	−1.91(0.3)
		SLICE	−2.94(7.4)	−4.10(6.6)	−1.97(13.0)
	NS–SMC	RW	−3.07(0.4)	−4.41(0.4)	−1.90(0.5)
		MALA	−3.05(4.1)	−4.30(3.9)	−1.93(5.6)
		SLICE	−3.03(3.6)	−4.25(3.2)	−1.95(6.6)
$\log \Lambda_{22}$	Gold standard		−2.20	−3.50	−1.70
	TA–SMC	RW	−2.22(1.0)	−3.49(1.0)	−1.70(1.0)
		MALA	−2.21(0.2)	−3.48(0.4)	−1.70(0.3)
		SLICE	−2.29(10.8)	−3.31(5.5)	−1.73(22.6)
	NS–SMC	RW	−2.22(0.4)	−3.53(0.6)	−1.70(0.6)
		MALA	−2.23(3.5)	−3.48(5.1)	−1.71(9.4)
		SLICE	−2.23(3.5)	−3.38(3.9)	−1.72(8.0)
$\log \Lambda_{33}$	Gold standard		−0.48	−0.70	−0.24
	TA–SMC	RW	−0.48(1.0)	−0.71(1.0)	−0.24(1.0)
		MALA	−0.48(0.6)	−0.71(0.4)	−0.24(0.6)
		SLICE	−0.48(56.6)	−0.71(25.3)	−0.23(34.0)
	NS–SMC	RW	−0.48(1.3)	−0.71(1.1)	−0.24(1.4)
		MALA	−0.47(11.7)	−0.70(8.4)	−0.23(7.8)
		SLICE	−0.48(23.0)	−0.70(18.9)	−0.24(18.1)
$\log \Lambda_{44}$	Gold standard		−3.45	−4.49	−2.54
	TA–SMC	RW	−3.44(1.0)	−4.49(1.0)	−2.53(1.0)
		MALA	−3.44(0.3)	−4.47(0.4)	−2.53(0.4)
		SLICE	−3.36(16.6)	−4.26(14.8)	−2.52(22.2)
	NS–SMC	RW	−3.44(0.3)	−4.49(0.5)	−2.54(0.6)
		MALA	−3.45(7.6)	−4.43(9.7)	−2.56(7.3)
		SLICE	−3.41(7.5)	−4.38(8.7)	−2.53(9.3)
$\log \Lambda_{55}$	Gold standard		−1.39	−1.65	−1.13
	TA–SMC	RW	−1.39(1.0)	−1.65(1.0)	−1.12(1.0)
		MALA	−1.39(0.6)	−1.65(0.5)	−1.12(0.6)
		SLICE	−1.40(39.1)	−1.66(23.8)	−1.13(21.2)
	NS–SMC	RW	−1.38(1.4)	−1.64(1.3)	−1.12(1.8)
		MALA	−1.39(8.9)	−1.65(5.9)	−1.13(7.1)
		SLICE	−1.39(16.6)	−1.65(11.2)	−1.13(13.4)
$\log \Lambda_{66}$	Gold standard		−1.37	−1.63	−1.10
	TA–SMC	RW	−1.37(1.0)	−1.63(1.0)	−1.10(1.0)
		MALA	−1.37(0.4)	−1.63(0.3)	−1.11(0.6)
		SLICE	−1.37(28.0)	−1.64(18.6)	−1.11(18.3)
	NS–SMC	RW	−1.37(1.0)	−1.63(1.2)	−1.11(1.3)
		MALA	−1.37(7.1)	−1.63(4.6)	−1.10(7.0)
		SLICE	−1.37(15.2)	−1.63(10.6)	−1.11(14.4)

Table 4: Results for FA2 — Part 2 of 3

			$\widehat{\text{mean}}$	$\widehat{\text{lower}}$	$\widehat{\text{upper}}$
$\log \beta_{11}$	Gold standard		−0.02	−0.15	0.11
	TA–SMC	RW	−0.02(1.0)	−0.15(1.0)	0.11(1.0)
		MALA	−0.02(0.3)	−0.15(0.3)	0.11(0.5)
		SLICE	−0.02(29.2)	−0.14(16.4)	0.11(32.8)
	NS–SMC	RW	−0.02(0.7)	−0.15(0.8)	0.11(1.6)
		MALA	−0.02(6.0)	−0.15(7.3)	0.11(7.8)
		SLICE	−0.02(14.0)	−0.14(6.8)	0.11(22.1)
β_{21}	Gold standard		0.95	0.83	1.09
	TA–SMC	RW	0.95(1.0)	0.83(1.0)	1.09(1.0)
		MALA	0.95(0.4)	0.83(0.4)	1.09(0.4)
		SLICE	0.96(25.3)	0.84(27.1)	1.09(24.3)
	NS–SMC	RW	0.95(0.8)	0.83(0.9)	1.09(1.2)
		MALA	0.95(4.9)	0.83(6.1)	1.09(6.3)
		SLICE	0.95(15.6)	0.83(12.5)	1.09(13.5)
β_{31}	Gold standard		0.45	0.30	0.62
	TA–SMC	RW	0.45(1.0)	0.30(1.0)	0.62(1.0)
		MALA	0.45(0.4)	0.30(0.4)	0.62(0.4)
		SLICE	0.46(28.7)	0.30(26.3)	0.62(24.6)
	NS–SMC	RW	0.46(0.8)	0.30(1.0)	0.62(1.2)
		MALA	0.45(8.3)	0.30(6.5)	0.62(7.2)
		SLICE	0.46(20.9)	0.30(14.1)	0.62(18.8)
β_{41}	Gold standard		0.39	0.23	0.56
	TA–SMC	RW	0.39(1.0)	0.23(1.0)	0.56(1.0)
		MALA	0.39(0.4)	0.23(0.4)	0.56(0.3)
		SLICE	0.40(22.9)	0.23(23.0)	0.56(22.4)
	NS–SMC	RW	0.40(0.7)	0.23(1.0)	0.56(0.9)
		MALA	0.39(5.7)	0.23(6.1)	0.56(4.9)
		SLICE	0.39(18.6)	0.24(15.3)	0.56(15.3)
β_{51}	Gold standard		0.41	0.25	0.58
	TA–SMC	RW	0.41(1.0)	0.25(1.0)	0.58(1.0)
		MALA	0.41(0.4)	0.25(0.5)	0.58(0.3)
		SLICE	0.42(22.6)	0.25(22.3)	0.58(17.6)
	NS–SMC	RW	0.41(0.8)	0.25(1.1)	0.58(0.8)
		MALA	0.41(5.3)	0.25(5.3)	0.58(3.2)
		SLICE	0.41(18.6)	0.26(14.4)	0.58(13.0)
β_{61}	Gold standard		0.41	0.25	0.57
	TA–SMC	RW	0.41(1.0)	0.25(1.0)	0.58(1.0)
		MALA	0.41(0.4)	0.25(0.3)	0.57(0.4)
		SLICE	0.41(25.6)	0.25(22.4)	0.57(27.1)
	NS–SMC	RW	0.41(0.6)	0.25(1.0)	0.58(1.0)
		MALA	0.41(5.9)	0.25(6.2)	0.57(5.3)
		SLICE	0.41(19.3)	0.25(14.9)	0.57(19.0)

Table 5: Results for FA2 — Part 3 of 3

			$\widehat{\text{mean}}$	$\widehat{\text{lower}}$	$\widehat{\text{upper}}$
$\log \beta_{22}$	Gold standard		-3.54	-6.34	-2.21
	TA–SMC	RW	$-3.57(1.0)$	$-6.06(1.0)$	$-2.23(1.0)$
		MALA	$-3.53(0.3)$	$-6.17(0.6)$	$-2.22(0.3)$
		SLICE	$-3.46(6.0)$	$-5.15(2.7)$	$-2.26(11.4)$
	NS–SMC	RW	$-3.57(0.4)$	$-6.34(1.0)$	$-2.22(0.4)$
		MALA	$-3.50(4.6)$	$-5.49(2.5)$	$-2.26(11.3)$
		SLICE	$-3.49(3.8)$	$-5.39(1.9)$	$-2.25(7.5)$
β_{32}	Gold standard		0.25	-0.50	0.56
	TA–SMC	RW	0.22(1.0)	$-0.47(1.0)$	0.56(1.0)
		MALA	0.25(0.2)	$-0.49(0.0)$	0.56(0.2)
		SLICE	0.16(3.1)	$-0.37(6.5)$	0.54(75.5)
	NS–SMC	RW	0.22(0.5)	$-0.49(0.4)$	0.56(0.5)
		MALA	0.23(2.2)	$-0.42(5.6)$	0.56(4.1)
		SLICE	0.22(1.5)	$-0.41(4.6)$	0.56(1.7)
β_{42}	Gold standard		0.55	-0.97	1.03
	TA–SMC	RW	0.47(1.0)	$-0.93(1.0)$	1.03(1.0)
		MALA	0.54(0.2)	$-0.96(0.0)$	1.03(0.2)
		SLICE	0.35(3.0)	$-0.68(7.1)$	0.99(658.8)
	NS–SMC	RW	0.47(0.5)	$-0.95(0.5)$	1.03(0.3)
		MALA	0.49(2.2)	$-0.80(6.1)$	1.03(4.3)
		SLICE	0.46(1.5)	$-0.77(5.1)$	1.03(2.4)
β_{52}	Gold standard		0.46	-0.84	0.90
	TA–SMC	RW	0.40(1.0)	$-0.80(1.0)$	0.90(1.0)
		MALA	0.46(0.2)	$-0.83(0.0)$	0.90(0.2)
		SLICE	0.29(3.1)	$-0.60(7.0)$	0.86(482.9)
	NS–SMC	RW	0.40(0.5)	$-0.82(0.5)$	0.90(0.7)
		MALA	0.42(2.2)	$-0.69(6.0)$	0.90(4.9)
		SLICE	0.39(1.5)	$-0.67(5.0)$	0.90(2.4)
β_{62}	Gold standard		0.46	-0.84	0.90
	TA–SMC	RW	0.40(1.0)	$-0.80(1.0)$	0.90(1.0)
		MALA	0.46(0.2)	$-0.83(0.0)$	0.90(0.2)
		SLICE	0.29(3.1)	$-0.60(7.0)$	0.86(405.4)
	NS–SMC	RW	0.39(0.5)	$-0.82(0.5)$	0.89(0.5)
		MALA	0.41(2.2)	$-0.69(6.0)$	0.89(3.5)
		SLICE	0.39(1.5)	$-0.67(5.0)$	0.90(2.0)

Table 6: FA3 Inference Results — Part 1 of 4

			$\widehat{\text{mean}}$	$\widehat{\text{lower}}$	$\widehat{\text{upper}}$
$\log \Lambda_{11}$	Gold standard		−2.89	−4.31	−1.86
	TA–SMC	RW	−2.89(1.0)	−4.25(1.0)	−1.86(1.0)
		MALA	−2.88(0.1)	−4.28(0.1)	−1.86(0.1)
		SLICE	−2.84(5.0)	−4.14(3.4)	−1.89(11.0)
	NS–SMC	RW	−2.88(0.4)	−4.30(0.5)	−1.86(0.6)
		MALA	−2.87(0.9)	−4.28(0.8)	−1.86(1.1)
		SLICE	−2.87(2.6)	−4.23(2.0)	−1.86(4.0)
$\log \Lambda_{22}$	Gold standard		−2.38	−3.88	−1.73
	TA–SMC	RW	−2.38(1.0)	−3.82(1.0)	−1.73(1.0)
		MALA	−2.38(0.1)	−3.84(0.1)	−1.73(0.1)
		SLICE	−2.43(6.8)	−3.71(4.7)	−1.76(10.7)
	NS–SMC	RW	−2.39(0.5)	−3.85(0.8)	−1.73(0.4)
		MALA	−2.41(1.1)	−3.84(1.1)	−1.74(1.0)
		SLICE	−2.40(3.2)	−3.84(3.4)	−1.74(3.9)
$\log \Lambda_{33}$	Gold standard		−1.08	−3.84	−0.27
	TA–SMC	RW	−1.15(1.0)	−3.63(1.0)	−0.28(1.0)
		MALA	−1.12(0.1)	−3.81(0.1)	−0.27(0.1)
		SLICE	−1.09(2.3)	−3.21(3.4)	−0.28(4.9)
	NS–SMC	RW	−1.10(0.4)	−3.75(0.4)	−0.27(0.3)
		MALA	−1.11(0.6)	−3.63(1.1)	−0.28(1.1)
		SLICE	−1.11(1.0)	−3.68(1.2)	−0.27(1.0)
$\log \Lambda_{44}$	Gold standard		−3.17	−4.42	−1.96
	TA–SMC	RW	−3.19(1.0)	−4.41(1.0)	−2.01(1.0)
		MALA	−3.18(0.1)	−4.41(0.1)	−1.99(0.1)
		SLICE	−3.13(4.9)	−4.28(6.6)	−2.05(4.2)
	NS–SMC	RW	−3.18(0.5)	−4.42(0.9)	−1.99(0.4)
		MALA	−3.20(1.0)	−4.43(0.8)	−2.05(2.1)
		SLICE	−3.16(2.1)	−4.37(4.1)	−2.00(1.8)
$\log \Lambda_{55}$	Gold standard		−1.77	−3.80	−1.16
	TA–SMC	RW	−1.77(1.0)	−3.68(1.0)	−1.16(1.0)
		MALA	−1.76(0.1)	−3.74(0.1)	−1.16(0.1)
		SLICE	−1.80(4.6)	−3.40(3.7)	−1.17(6.0)
	NS–SMC	RW	−1.75(0.4)	−3.69(0.5)	−1.16(0.3)
		MALA	−1.73(1.6)	−3.35(2.7)	−1.16(2.3)
		SLICE	−1.77(2.1)	−3.62(2.1)	−1.16(2.1)
$\log \Lambda_{66}$	Gold standard		−1.75	−3.73	−1.14
	TA–SMC	RW	−1.74(1.0)	−3.56(1.0)	−1.14(1.0)
		MALA	−1.73(0.1)	−3.64(0.1)	−1.15(0.1)
		SLICE	−1.75(3.9)	−3.28(3.3)	−1.15(5.5)
	NS–SMC	RW	−1.74(0.5)	−3.64(0.5)	−1.14(0.5)
		MALA	−1.74(1.7)	−3.47(2.5)	−1.14(1.6)
		SLICE	−1.74(1.8)	−3.45(2.0)	−1.15(1.7)

Table 7: Results for FA3 — Part 2 of 4

			$\widehat{\text{mean}}$	$\widehat{\text{lower}}$	$\widehat{\text{upper}}$
$\log \beta_{11}$	Gold standard		-0.02	-0.16	0.11
	TA–SMC	RW	$-0.02(1.0)$	$-0.16(1.0)$	0.11(1.0)
		MALA	$-0.02(0.1)$	$-0.16(0.1)$	0.11(0.2)
		SLICE	$-0.03(10.7)$	$-0.16(7.5)$	0.10(11.9)
	NS–SMC	RW	$-0.02(1.0)$	$-0.16(1.3)$	0.11(1.4)
		MALA	$-0.02(1.3)$	$-0.16(1.4)$	0.11(1.3)
		SLICE	$-0.03(7.3)$	$-0.16(6.7)$	0.10(8.2)
β_{21}	Gold standard		0.96	0.83	1.10
	TA–SMC	RW	0.96(1.0)	0.83(1.0)	1.09(1.0)
		MALA	0.96(0.1)	0.83(0.2)	1.09(0.2)
		SLICE	0.96(10.2)	0.84(9.2)	1.09(10.5)
	NS–SMC	RW	0.96(1.0)	0.83(1.4)	1.10(1.6)
		MALA	0.96(1.0)	0.83(1.4)	1.10(1.2)
		SLICE	0.96(5.4)	0.83(6.6)	1.09(9.6)
β_{31}	Gold standard		0.46	0.30	0.63
	TA–SMC	RW	0.46(1.0)	0.30(1.0)	0.63(1.0)
		MALA	0.46(0.1)	0.30(0.2)	0.63(0.2)
		SLICE	0.46(15.0)	0.30(11.0)	0.62(10.3)
	NS–SMC	RW	0.46(1.6)	0.30(2.1)	0.63(1.9)
		MALA	0.46(1.3)	0.30(1.5)	0.63(1.2)
		SLICE	0.46(8.3)	0.30(8.4)	0.62(7.9)
β_{41}	Gold standard		0.40	0.23	0.57
	TA–SMC	RW	0.40(1.0)	0.23(1.0)	0.57(1.0)
		MALA	0.40(0.1)	0.23(0.2)	0.57(0.2)
		SLICE	0.40(16.9)	0.23(17.7)	0.56(12.6)
	NS–SMC	RW	0.40(1.1)	0.23(1.9)	0.57(1.3)
		MALA	0.40(1.0)	0.23(1.5)	0.57(1.4)
		SLICE	0.40(8.0)	0.23(13.2)	0.56(7.3)
β_{51}	Gold standard		0.42	0.25	0.58
	TA–SMC	RW	0.42(1.0)	0.25(1.0)	0.58(1.0)
		MALA	0.41(0.1)	0.25(0.2)	0.58(0.2)
		SLICE	0.41(18.3)	0.25(16.2)	0.58(12.3)
	NS–SMC	RW	0.41(1.5)	0.25(1.9)	0.58(1.5)
		MALA	0.42(1.1)	0.25(1.2)	0.58(1.7)
		SLICE	0.41(8.3)	0.25(11.8)	0.58(7.7)
β_{61}	Gold standard		0.41	0.25	0.58
	TA–SMC	RW	0.41(1.0)	0.25(1.0)	0.58(1.0)
		MALA	0.41(0.1)	0.25(0.2)	0.58(0.3)
		SLICE	0.41(16.1)	0.25(14.8)	0.58(14.1)
	NS–SMC	RW	0.41(1.1)	0.25(1.4)	0.58(1.8)
		MALA	0.41(0.8)	0.25(0.9)	0.58(1.2)
		SLICE	0.41(8.3)	0.25(11.7)	0.58(9.3)

Table 8: Results for FA3 — Part 3 of 4

			$\widehat{\text{mean}}$	$\widehat{\text{lower}}$	$\widehat{\text{upper}}$
$\log \beta_{22}$	Gold standard		-3.23	-6.06	-1.63
	TA–SMC	RW	$-3.22(1.0)$	$-5.83(1.0)$	$-1.67(1.0)$
		MALA	$-3.23(0.1)$	$-5.99(0.3)$	$-1.65(0.1)$
		SLICE	$-3.20(5.7)$	$-5.42(2.8)$	$-1.73(2.5)$
	NS–SMC	RW	$-3.24(0.6)$	$-6.01(0.8)$	$-1.64(0.6)$
		MALA	$-3.10(2.5)$	$-5.19(2.1)$	$-1.64(1.2)$
		SLICE	$-3.22(1.8)$	$-5.74(2.1)$	$-1.68(1.3)$
β_{32}	Gold standard		-0.06	-0.83	0.58
	TA–SMC	RW	$-0.06(1.0)$	$-0.79(1.0)$	0.57(1.0)
		MALA	$-0.06(0.1)$	$-0.83(0.1)$	0.59(0.2)
		SLICE	$-0.06(4.0)$	$-0.69(4.8)$	0.55(3.5)
	NS–SMC	RW	$-0.06(0.6)$	$-0.81(0.7)$	0.58(0.9)
		MALA	$-0.08(1.2)$	$-0.76(1.8)$	0.56(1.6)
		SLICE	$-0.06(1.9)$	$-0.77(2.5)$	0.56(1.9)
β_{42}	Gold standard		0.23	-0.87	0.94
	TA–SMC	RW	0.23(1.0)	$-0.82(1.0)$	0.93(1.0)
		MALA	0.24(0.1)	$-0.86(0.1)$	0.94(0.1)
		SLICE	0.19(5.4)	$-0.72(6.7)$	0.88(29.9)
	NS–SMC	RW	0.23(0.6)	$-0.85(0.3)$	0.94(0.5)
		MALA	0.22(1.9)	$-0.78(2.2)$	0.92(2.6)
		SLICE	0.22(2.1)	$-0.81(2.2)$	0.93(4.2)
β_{52}	Gold standard		0.23	-0.79	0.89
	TA–SMC	RW	0.23(1.0)	$-0.74(1.0)$	0.87(1.0)
		MALA	0.24(0.1)	$-0.78(0.1)$	0.88(0.1)
		SLICE	0.20(5.7)	$-0.65(5.7)$	0.82(15.4)
	NS–SMC	RW	0.23(0.7)	$-0.77(0.3)$	0.88(0.6)
		MALA	0.22(1.9)	$-0.70(1.9)$	0.86(2.6)
		SLICE	0.22(2.2)	$-0.74(2.3)$	0.87(2.9)
β_{62}	Gold standard		0.15	-0.81	0.86
	TA–SMC	RW	0.15(1.0)	$-0.77(1.0)$	0.84(1.0)
		MALA	0.16(0.1)	$-0.80(0.1)$	0.86(0.1)
		SLICE	0.12(4.9)	$-0.70(6.0)$	0.79(16.8)
	NS–SMC	RW	0.15(0.5)	$-0.80(0.4)$	0.86(0.5)
		MALA	0.13(1.8)	$-0.74(2.2)$	0.82(1.9)
		SLICE	0.14(1.9)	$-0.76(1.9)$	0.84(3.0)
$\log \beta_{33}$	Gold standard		-1.21	-3.63	-0.16
	TA–SMC	RW	$-1.16(1.0)$	$-3.30(1.0)$	$-0.19(1.0)$
		MALA	$-1.23(0.2)$	$-3.71(0.3)$	$-0.17(0.1)$
		SLICE	$-1.23(6.7)$	$-2.98(2.1)$	$-0.28(4.2)$
	NS–SMC	RW	$-1.22(0.7)$	$-3.69(1.3)$	$-0.18(0.5)$
		MALA	$-1.17(2.8)$	$-3.00(2.5)$	$-0.21(1.6)$
		SLICE	$-1.23(3.8)$	$-3.50(3.4)$	$-0.20(1.6)$

Table 9: Results for FA3 — Part 4 of 4.

			$\widehat{\text{mean}}$	$\widehat{\text{lower}}$	$\widehat{\text{upper}}$
β_{43}	Gold standard		0.57	−0.54	0.97
	TA–SMC	RW	0.57(1.0)	−0.40(1.0)	0.97(1.0)
		MALA	0.56(0.1)	−0.49(0.1)	0.97(0.1)
		SLICE	0.55(5.6)	−0.24(2.3)	0.96(13.1)
	NS–SMC	RW	0.56(0.5)	−0.50(0.7)	0.97(0.5)
		MALA	0.57(1.7)	−0.35(1.2)	0.97(2.0)
		SLICE	0.57(1.7)	−0.38(1.6)	0.97(2.7)
β_{53}	Gold standard		0.47	−0.53	0.89
	TA–SMC	RW	0.47(1.0)	−0.45(1.0)	0.89(1.0)
		MALA	0.46(0.1)	−0.52(0.1)	0.89(0.1)
		SLICE	0.44(5.5)	−0.32(3.6)	0.87(6.7)
	NS–SMC	RW	0.46(0.5)	−0.51(0.6)	0.89(0.6)
		MALA	0.47(1.8)	−0.40(1.6)	0.88(2.0)
		SLICE	0.47(1.5)	−0.43(1.7)	0.88(1.9)
β_{63}	Gold standard		0.53	−0.44	0.90
	TA–SMC	RW	0.53(1.0)	−0.33(1.0)	0.90(1.0)
		MALA	0.51(0.1)	−0.41(0.1)	0.90(0.1)
		SLICE	0.51(6.2)	−0.19(2.6)	0.88(5.5)
	NS–SMC	RW	0.51(0.6)	−0.40(0.8)	0.90(0.6)
		MALA	0.53(1.9)	−0.27(1.4)	0.89(1.3)
		SLICE	0.53(2.1)	−0.30(1.9)	0.90(2.1)

Table 10: Results for ODE model – Part 1 of 2

			$\widehat{\text{mean}}$	$\widehat{\text{lower}}$	$\widehat{\text{upper}}$
$\log k_1$	Gold standard		-3.40	-4.46	-2.71
	TA–SMC	RW	$-3.33(1.0)$	$-4.06(1.0)$	$-2.71(1.0)$
		MALA	$-3.18(1.3)$	$-3.67(0.4)$	$-2.66(4.2)$
		SLICE	$-3.36(8.3)$	$-4.09(6.8)$	$-2.71(7.3)$
	NS–SMC	RW	$-3.34(4.2)$	$-4.10(3.4)$	$-2.71(2.5)$
		MALA	$-3.36(2.7)$	$-4.06(1.7)$	$-2.72(2.0)$
		SLICE	$-3.33(9.8)$	$-3.99(4.8)$	$-2.70(7.6)$
$\log V_1$	Gold standard		-0.98	-2.02	0.19
	TA–SMC	RW	$-1.03(1.0)$	$-2.02(1.0)$	$0.04(1.0)$
		MALA	$-1.09(3.2)$	$-2.03(4.2)$	$-0.09(2.2)$
		SLICE	$-1.00(6.7)$	$-1.98(12.0)$	$0.00(6.8)$
	NS–SMC	RW	$-1.03(1.7)$	$-2.03(2.9)$	$0.06(2.4)$
		MALA	$-0.96(1.3)$	$-1.95(3.9)$	$0.15(1.4)$
		SLICE	$-1.02(5.1)$	$-1.99(11.0)$	$-0.00(6.9)$
$\log K_{m1}$	Gold standard		-1.01	-4.12	1.04
	TA–SMC	RW	$-0.98(1.0)$	$-3.69(1.0)$	$0.95(1.0)$
		MALA	$-1.00(3.2)$	$-3.57(2.0)$	$0.79(2.2)$
		SLICE	$-0.98(6.8)$	$-3.56(4.7)$	$0.93(4.3)$
	NS–SMC	RW	$-0.96(2.2)$	$-3.62(2.9)$	$0.95(2.6)$
		MALA	$-0.90(2.8)$	$-3.43(2.0)$	$0.94(2.2)$
		SLICE	$-1.07(4.9)$	$-3.69(3.3)$	$0.88(4.6)$
$\log K_{m2}$	Gold standard		-2.86	-4.38	-1.79
	TA–SMC	RW	$-2.77(1.0)$	$-3.92(1.0)$	$-1.81(1.0)$
		MALA	$-2.58(1.9)$	$-3.46(1.0)$	$-1.76(3.2)$
		SLICE	$-2.80(7.0)$	$-3.93(4.8)$	$-1.82(5.6)$
	NS–SMC	RW	$-2.79(3.9)$	$-3.97(3.3)$	$-1.81(2.3)$
		MALA	$-2.81(2.1)$	$-3.93(1.4)$	$-1.81(1.6)$
		SLICE	$-2.76(8.3)$	$-3.84(4.4)$	$-1.80(6.6)$
$\log V_2$	Gold standard		-2.05	-2.64	-1.07
	TA–SMC	RW	$-2.11(1.0)$	$-2.65(1.0)$	$-1.47(1.0)$
		MALA	$-2.24(1.1)$	$-2.70(4.7)$	$-1.82(0.3)$
		SLICE	$-2.09(9.0)$	$-2.64(8.8)$	$-1.43(6.6)$
	NS–SMC	RW	$-2.10(4.6)$	$-2.65(2.7)$	$-1.42(3.3)$
		MALA	$-2.09(3.0)$	$-2.64(2.2)$	$-1.46(1.6)$
		SLICE	$-2.10(10.4)$	$-2.65(8.0)$	$-1.52(4.4)$

Table 11: Results for ODE model – Part 2 of 2

			$\widehat{\text{mean}}$	$\widehat{\text{lower}}$	$\widehat{\text{upper}}$
$\log S(0)$	Gold standard		-0.23	-1.24	0.61
	TA–SMC	RW	$-0.22(1.0)$	$-1.18(1.0)$	0.59(1.0)
		MALA	$-0.24(3.0)$	$-1.15(2.9)$	0.56(2.6)
		SLICE	$-0.23(7.8)$	$-1.14(10.0)$	0.56(9.5)
	NS–SMC	RW	$-0.21(1.6)$	$-1.17(2.5)$	0.61(1.6)
		MALA	$-0.26(1.6)$	$-1.22(2.3)$	0.55(2.8)
		SLICE	$-0.24(4.5)$	$-1.16(7.5)$	0.57(7.4)
$\log D(0)$	Gold standard		-2.88	-6.05	-1.02
	TA–SMC	RW	$-2.85(1.0)$	$-5.76(1.0)$	$-1.01(1.0)$
		MALA	$-2.85(2.5)$	$-5.49(1.2)$	$-1.06(4.4)$
		SLICE	$-2.84(6.0)$	$-5.53(5.3)$	$-1.04(14.5)$
	NS–SMC	RW	$-2.89(2.7)$	$-5.84(3.3)$	$-1.02(5.0)$
		MALA	$-2.90(1.1)$	$-5.75(1.0)$	$-1.02(2.1)$
		SLICE	$-2.95(6.5)$	$-5.66(4.3)$	$-1.06(12.5)$
$\log R(0)$	Gold standard		0.31	-0.28	0.83
	TA–SMC	RW	0.30(1.0)	$-0.24(1.0)$	0.80(1.0)
		MALA	0.30(2.1)	$-0.22(1.7)$	0.77(2.2)
		SLICE	0.31(7.2)	$-0.21(5.3)$	0.79(8.2)
	NS–SMC	RW	0.31(1.9)	$-0.24(2.6)$	0.81(2.6)
		MALA	0.32(2.1)	$-0.20(1.9)$	0.82(2.4)
		SLICE	0.30(5.0)	$-0.23(4.6)$	0.80(5.8)
$\log R_{pp}(0)$	Gold standard		-4.17	-6.89	-2.90
	TA–SMC	RW	$-4.14(1.0)$	$-6.60(1.0)$	$-2.91(1.0)$
		MALA	$-4.09(1.1)$	$-6.25(0.9)$	$-2.93(3.7)$
		SLICE	$-4.14(4.3)$	$-6.32(2.6)$	$-2.93(6.6)$
	NS–SMC	RW	$-4.19(6.9)$	$-6.50(2.1)$	$-2.93(2.8)$
		MALA	$-4.15(1.6)$	$-6.40(1.0)$	$-2.93(2.3)$
		SLICE	$-4.10(2.8)$	$-6.27(2.3)$	$-2.92(3.9)$

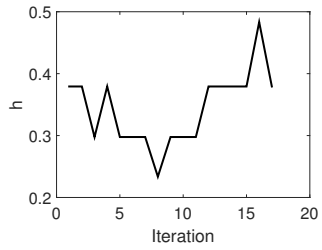
2. CALIBRATION PLOTS

The following plots display the evolution of the automated choice of MCMC kernel parameters h (for RW/MALA) and w (for Slice Sampling), as well as the evolution of the choice of MCMC iterations (repeats) chosen by the Calibration methods described in Section 5 of the paper. We use a range of twenty possible values for h that are logarithmically spaced on the interval [0.01,1], and ten possible values for w that are linearly spaced on the interval [0.02,2].

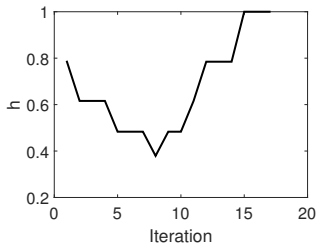
Note here that iteration on the x–axis refers not to MCMC iteration, but instead the time step of the SMC sampler.

2.1 Factor Analysis – One Factor

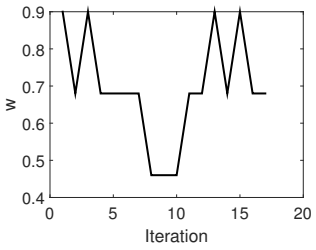
MCMC Parameters



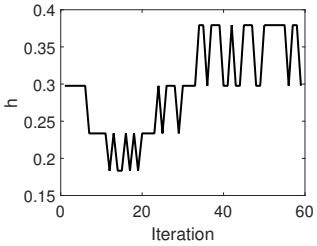
(a) TA–SMC RW



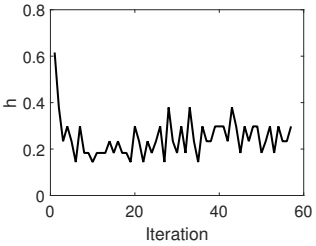
(b) TA–SMC MALA



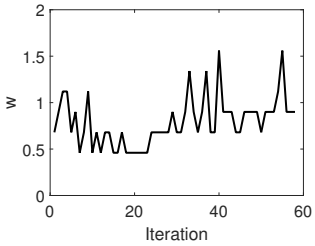
(c) TA–SMC SLICE



(d) NS–SMC RW

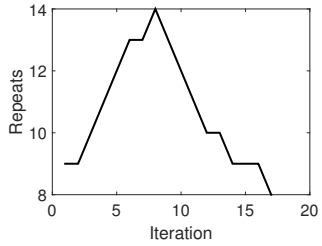


(e) NS–SMC MALA

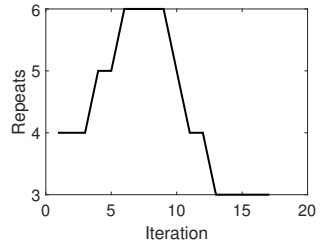


(f) NS–SMC SLICE

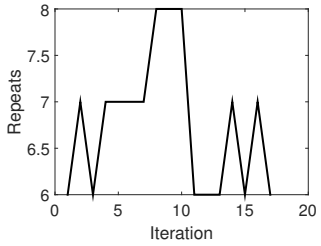
MCMC Repeats



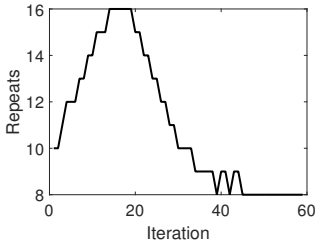
(g) TA–SMC RW



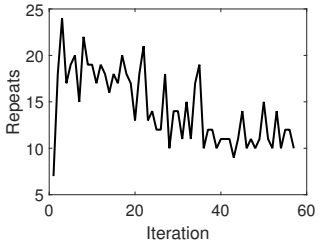
(h) TA–SMC MALA



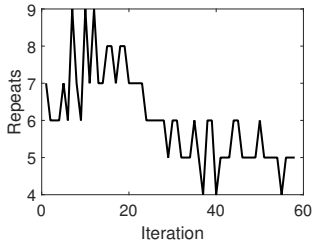
(i) TA–SMC SLICE



(j) NS–SMC RW



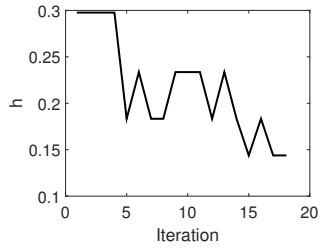
(k) NS–SMC MALA



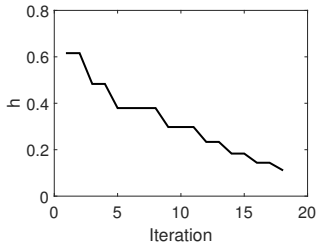
(l) NS–SMC SLICE

2.2 Factor Analysis – Two Factors

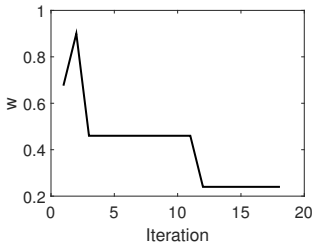
MCMC Parameters



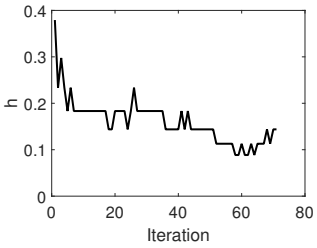
(a) TA–SMC RW



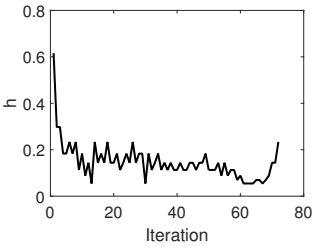
(b) TA–SMC MALA



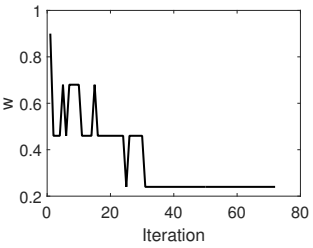
(c) TA–SMC SLICE



(d) NS–SMC RW

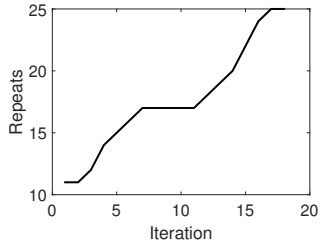


(e) NS–SMC MALA

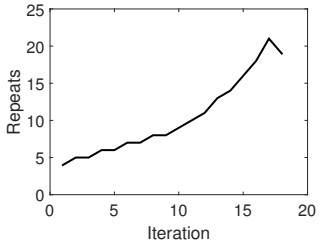


(f) NS–SMC SLICE

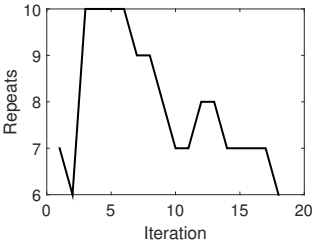
MCMC Repeats



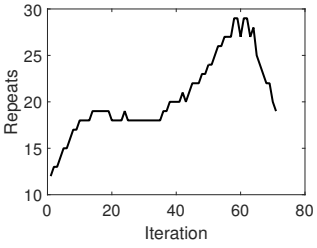
(g) TA–SMC RW



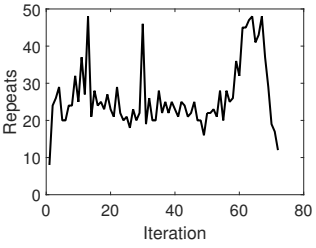
(h) TA–SMC MALA



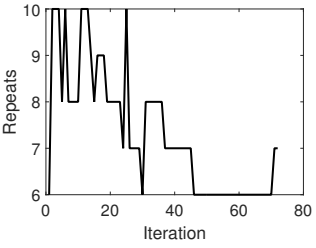
(i) TA–SMC SLICE



(j) NS–SMC RW



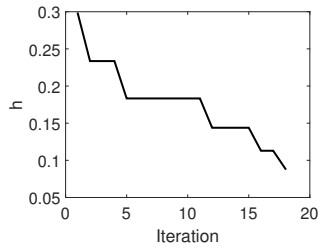
(k) NS–SMC MALA



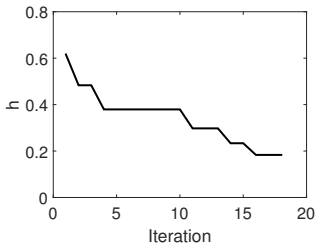
(l) NS–SMC SLICE

2.3 Factor Analysis – Three Factors

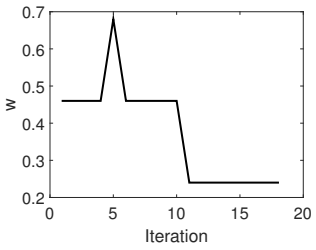
MCMC Parameters



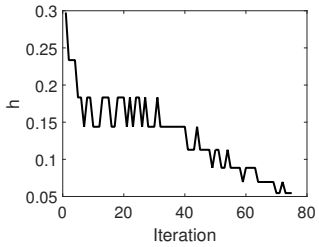
(a) TA–SMC RW



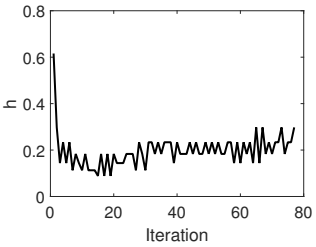
(b) TA–SMC MALA



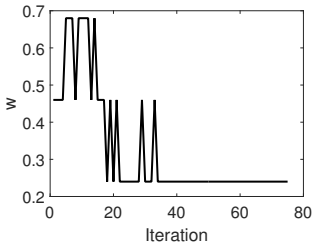
(c) TA–SMC SLICE



(d) NS–SMC RW

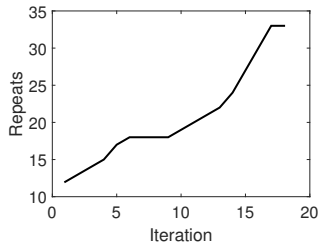


(e) NS–SMC MALA

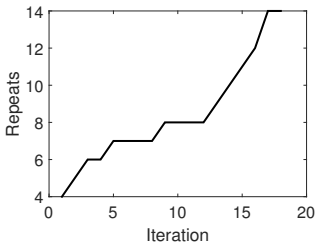


(f) NS–SMC SLICE

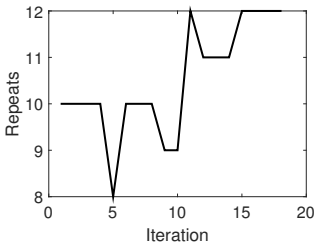
MCMC Repeats



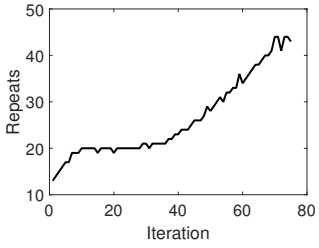
(g) TA–SMC RW



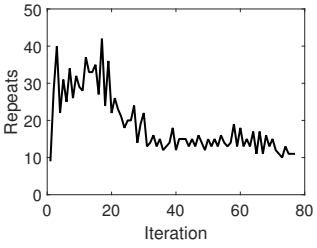
(h) TA–SMC MALA



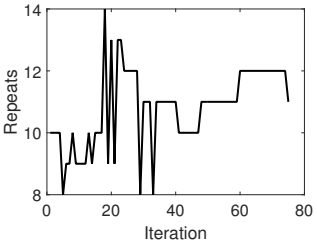
(i) TA–SMC SLICE



(j) NS–SMC RW



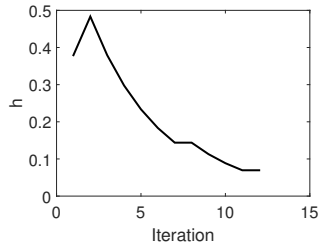
(k) NS–SMC MALA



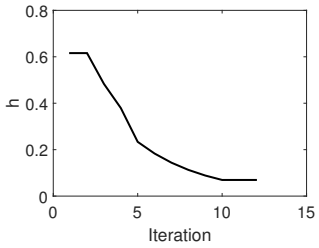
(l) NS–SMC SLICE

2.4 ODE

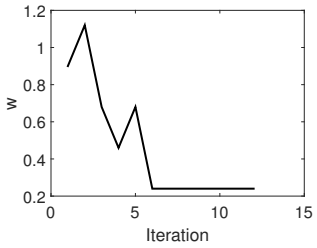
MCMC Parameters



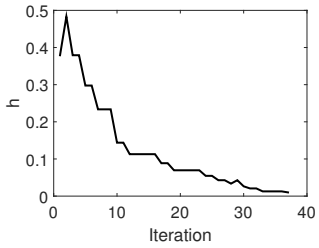
(a) TA–SMC RW



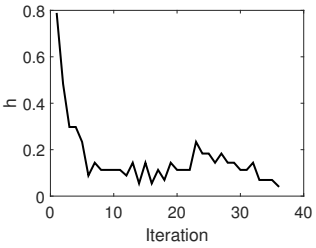
(b) TA–SMC MALA



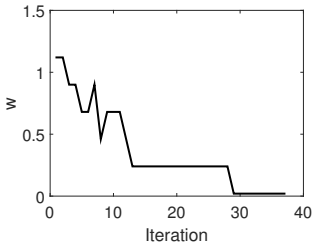
(c) TA–SMC SLICE



(d) NS–SMC RW

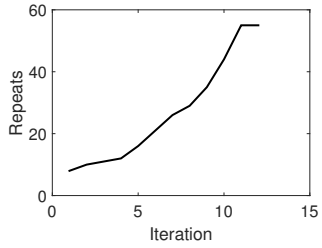


(e) NS–SMC MALA

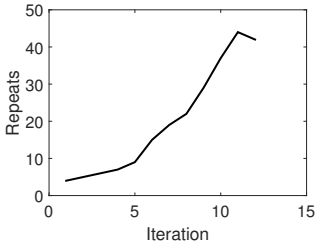


(f) NS–SMC SLICE

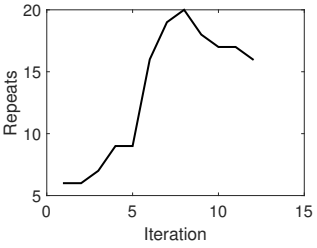
MCMC Repeats



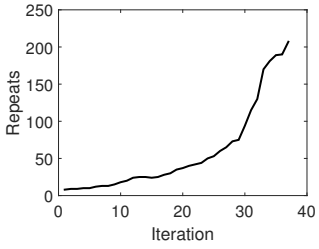
(g) TA–SMC RW



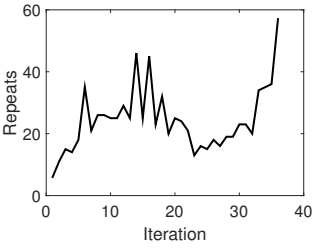
(h) TA–SMC MALA



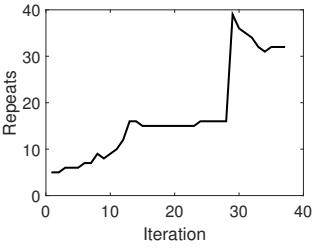
(i) TA–SMC SLICE



(j) NS–SMC RW



(k) NS–SMC MALA



(l) NS–SMC SLICE