## A simulation study to examine the information content in phylogenomic datasets under the multispecies coalescent model

Jun Huang<sup>1</sup>, Tomáš Flouri<sup>1</sup>, and Ziheng Yang<sup>1,\*</sup> Supplementary material

	/	se	qs=2, (	θ=0.002	25	sec	qs=8, 6	)=0.00	25		S	eqs=2	, θ=0.0 <sup>-</sup>	1	s	eqs=8,	θ=0.0	1
	0.0100	0.93	0.94	0.94	0.94	0.91	0.94	0.89	0.91	0.04	0.93	0.93	0.96	0.97	0.96	0.95	0.98	0.93
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0	0.0075	0.95	0.95	0.95	0.94	0.90	0.90	0.99	0.97	0.03	0.95	0.99	0.99	0.99	0.95	0.94	0.97	0.90
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	0.0075	1.00	0.97	1.00	0.88		0.95	0.99	0.90	0.03	0.98	0.93	0.93	0.95	0.99	0.92	0.92	0.90
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	0.020	0.99	0.97	1.00	0.96	0.97	0.99	0.99	0.90	0.08	0.97	0.95	0.97	0.96	0.95	0.92	0.92	0.92
$\tau_{D}$	0.015				Stations.			And the second	<b>Lesson</b>	0.06		- internet	-		Statistics	- Allegenter-		
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_	0.015	0.90	0.99	0.95	0.94	0.97	0.95	0.99	0.97	0.06	0.95	0.90	0.90	0.90	0.93	0.99	0.94	0.90
$\tau_{T}$	0.010			-			-	-	-	0.04	-		-			-	-	
	0.005									0.02	-							
	0.000	0.00	0.00	0.00	0.01	0.00	0.0	0.00	0.00	0.00		0.0	0.65	0.67		0.00	4.65	0.07
	0.015	0.98	0.99	0.96	0.94	0.99	0.95	0.99	0.96	0.06	0.99	0.97	0.96	0.95	0.98	0.98	1.00	0.95
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			100	40, SI=4	162=720	,	-1001=4	iu, sites	-1000		-1001=1	UU, SILE	5-250		uci=160,	siles=1	000	

Figure S1: The posterior 95% CIs and CI coverage for parameters under the MSC model for species tree U of figure 1. Model parameters for unbalanced tree:  $\tau_R = 5\theta$ ,  $\tau_S = 4\theta$ ,  $\tau_T = 3\theta$ ,  $\tau_U = 2.5\theta$ . See legend for figure 2.

	seqs=2, θ=0.0025	seqs=8, θ=0.0025	seqs=2, θ=0.01	seqs=8, θ=0.01
θΔ	0.0075 0.95 0.96 0.92 0.94 0.0050 0.051 0.95 0.96 0.92 0.94	0.92 0.95 0.94 0.95	0.04 0.03 0.94 0.94 0.94 0.96 0.91	0.99 0.97 0.95 0.98
- 7				
θ⊳	0.0075 0.94 0.95 0.92 0.92 0.0050 11 194 195 0.92 0.92	0.95 0.96 0.94 0.96	$0.04 \\ 0.03 \\ 0.93 \\ 0.98 \\ 0.94 \\ 0.94 \\ 0.97 \\ 0.97 \\ 0.91 \\ $	0.95 0.93 0.95 0.96
۰D				
θο	0.0100 0.0075 0.0075 0.0050	0.97 0.98 0.98 0.95	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.95 1.00 0.98 0.88
υC				
θp	0.0100 0.0075 $0.95$ $0.95$ $0.95$ $0.94$	0.96 0.96 0.96 0.92	$\begin{array}{c} 0.04 \\ 0.03 \\ 0.02 \\ 0.02 \\ 0.02 \\ 0.02 \\ 0.03 \\ 0.08 \\ 0.$	0.92 0.97 0.93 0.95
чD				
θ-	$\begin{array}{c} 0.0100 \\ 0.0075 \\ 0.0050 \\ 0.005$	0.94 0.95 0.99 0.93	$\begin{array}{c} 0.04 \\ 0.03 \\ 0.02 \\ 0.02 \\ 0.02 \\ 0.02 \\ 0.03 \\ 0.94 \\ 0.96 \\ 0.93 \\ 0.96 \\ 0.93 \\ 0.96 \\ 0.93 \\ 0.96 \\ 0.93 \\ 0.96 \\ 0.96 \\ 0.93 \\ 0.96 \\ 0.93 \\ 0.96 \\ 0.93 \\ 0.96 \\ 0.96 \\ 0.93 \\ 0.96 \\ 0.96 \\ 0.93 \\ 0.96 \\ 0.96 \\ 0.93 \\ 0.96 \\ 0.96 \\ 0.93 \\ 0.96 \\ 0.96 \\ 0.96 \\ 0.93 \\ 0.96 \\ 0.$	0.99 0.90 0.92 0.95
νE				
θ_	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1.00 0.93 0.95 0.96	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.91 0.97 0.95 0.97
٩R				
A.	0.0100 0.0075 0.0075 0.096 0.97 0.98	1.00 0.97 0.98 0.97	0.04 0.03 0.02 0.02 0.03 0.95 0.95 0.93 0.95	0.98 0.94 0.93 0.94
US				
Δ	0.0100 0.0075 1.00 0.94 0.96 0.91		$\begin{array}{c} 0.04 \\ 0.03 \\ 0.98 \\ 0.96 \\ 0.98 \\ 0.98 \\ 0.98 \\ 0.98 \\ 0.98 \\ 0.95 \\ 0.$	0.96 0.93 0.95 0.92
υŢ				
۵				11.00- 10 <u>197</u> 0.99 - 0.98
θU				
0	0.0100 0.0075 0.99 0.98 0.95 0.97	0_980.920.920.90	$\begin{array}{c} 0.04 \\ 0.03 \\ 0.13 \\ 0.97 \\ 0.93 \\ 0.93 \\ 0.93 \\ 0.93 \\ 0.96 \\ 0.$	0.96 0.94 0.94 0.95
θχ		This this balls the		
0	0.0100 0.0075 11.00 1.00 10.97		0.04 0.03 1.00 1.00 0.99 0.94	1.00 0.98 0.93 0.95
θ <sub>Y</sub>				
0	0.0100 0.0075 1100 0.95 0.98 0.90	0.88 0.92 0.94	0.04 0.03 11 00 0.95 0.95 0.94	Q.88 0.95 0.93 0.93
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θZ				
_	0.015	0.98 0.98 0.95 0.96	0.06 0.07 0.97 0.97 0.96	0.94 0.94 0.92 0.92
$\tau_{R}$	0.005		0.02	
_	0.000 0.015 0.010 0.010	<b>10.98</b> 0.96 0.98 0.98	0.06	0.95 0.95 0.95 0.97
$\tau_{S}$	0.005		0.02	entitie :
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$\tau_{T}$	0.005		0.02	
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	0.000 - 0.015 - 0.97 - 0.95 - 0.96 - 0.97	0.95 0.94 0.95 0.98	0.06 0.94 0.87 0.96 0.93	0.94 0.95 0.93 0.96
$\tau_X$		The second second	0.02	
	0.015 0.95 0.97 0.93 0.95	0.96 0.97 0.93 0.91	0.06 0.92 0.93 0.95 0.97	0.95 0.88 0.97 0.95
$\tau_W$				
	0.000 0.8 0.6 <b>10.96</b> 0.91 0.97 0.95	0.95 0.98 0.98 0.94	0.8	0.94 0.95 0.93 0.93
φ <sub>Y</sub>				
				0.96 0.93 0.96 0.95
φz				
	0.0loci=40. sites=25	50 — loci=40, sites=1000	loci=160, sites=250	loci=160, sites=1000

Figure S2: Posterior 95% HPD CIs and CI coverage for the 21 parameters in MSci model B of figure 8.

	seqs=2, θ=0.0025	seqs=8, θ=0.0025	seqs=2, θ=0.01	seqs=8, θ=0.01
θΔ	0.0100 0.0075 0.97 0.96 0.94 0.97 0.0050 1. million of June 1	0.97 0.94 0.96 0.95	$\begin{array}{c} 0.04 \\ 0.03 \\ 0.96 \\ 0.95 \\ 0.96 \\ 0.96 \\ 0.97 \\ 0.97 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.97 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.97 \\ 0.96 \\ 0.97 \\ 0.$	0.94 0.94 0.92 0.98
۰A				
Α_	0.0100 0.0075 0.97 0.95 0.97 0.97 0.0050 $10.97$ 0.95	0.96 0.93 0.96 0.88	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.96 0.97 0.91 0.94
νB				
0	0.0100 0.0075 $0.98$ $0.97$ $0.95$ $0.95$	0.96 0.93 0.97 0.94	0.04 0.93 0.99 0.95 0.95	0.92 0.94 0.94 0.98
θ <sub>C</sub>				
				0.93 0.94 0.95 0.93
$\theta_{D}$				
	0.0000		0.00	
$\theta_{E}$				0.96 0.98 0.94 0.96
	0.0000		0.00	
$\theta_{R}$	0.0075 <b>1.00</b> 0.99 1.00 0.94 0.0050 <b>1.00</b> 1.00 0.94	1.00 0.98 0.99 0.95	0.03 1.00 0.94 0.95 0.98 0.02 1.00 0.94 0.95 0.98	
IX.				
θε	0.0100 0.0075 0.0075 0.0050	1.00 0.95 1.00 0.96	0.04 0.03 0.02 0.02 0.02 0.05 0.95 0.97 0.92	0.93 0.96 0.92 0.94
v5				
۵	0.0100 0.0075 0.97 0.90 0.97 0.94	0.97 0.94 0.98 0.96	0.04 0.96 0.97 0.97 0.94	0.96 0.92 0.93 0.97
θŢ				
0	0.0000 0.0100 0.0075 1 1 00 0.97 1 00 0.95		0.04 0.03 <b>10.99 100</b> 0.98 0.97	1,00 .0,97 1,00 0.94
θυ	0.0050		0.02	
$\theta_X$				
$\theta_{Y}$	0.0075 - 1.00 - 1.00 - 1.00 - 0.98 0.0050 -		0.03 1.00 1.00 1.00 0.96	
θω			0.03 0.99 0.94 0.96 0.96 0.02	0.95 0.94 0.98 0.96
- • •				Statistic manager and statistic
A-		100 0.98 0.95 0.95	0.04 0.03 11.00 0.99 0.98 0.90	0.99 0.94 0.96 0.90
υZ				
T	0.015 0.99 0.95 0.97 0.96	0.99 0.97 0.98 0.91	0.06 0.04 0.97 0.93 0.95 0.96	0.98 0.98 0.92 0.95
٩R	0.005		0.02	
	$0.000^{-1}$ 0.015 0.010 $10.97$ 0.96 0.97 0.93	0.97 0.95 0.99 0.97	0.00	1.00 0.93 0.93 0.96
$\tau_{S}$	0.005		0.02	
	0.000			0.06 0.05 0.07 0.08
$\tau_{T}$	0.010 0.30 0.35 0.36 1.00		0.04 1.00 0.37 0.35 0.50	
	0.000		0.00	
τυ	0.010 0.98 0.97 0.99 0.96		0.04 0.98 0.95 0.98 0.96	0.95 0.92 0.94 0.93
	0.000		0.00	
$\tau_{X}$	0.010 0.96 0.97 0.96 0.95	0.95 0.97 0.96 0.97	0.04 0.94 0.92 0.94 0.95	0.95 0.94 0.93 0.92
				ferring while where ever
τιλ	0.010 - 0.96 - 0.92 - 0.96 - 0.96	0.94 0.98 0.97 0.93	0.08 0.92 0.91 0.95 0.93	0.95 0.92 0.93 0.94
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(D) /	0.8 0.6 0.4	0.92 0.96 0.96 0.97	0.8 0.6 0.95 0.93 0.89 0.97	0.94 0.95 0.90 0.95
ΨY				shadat fisher
(0)	0.8 0.6 0.95 0.95 0.96 0.96	0.92 0.92 0.95 0.90	0.8 0.6 0.96 0.93 0.99 0.99	0.94 0.94 0.91 0.95
ΨZ				
	——loci=40, sites=25	50 — loci=40, sites=1000	loci=160, sites=250	loci=160, sites=1000

Figure S3: Posterior 95% HPD CIs and CI coverage for the 21 parameters in MSci model U of figure 8.

Tree R		$\theta_A$	$\theta_B$	$\theta_C$	$\theta_D$	$\theta_E$	$\theta_R$	$\theta_{S}$	$\theta_T$	$\theta_U$	$ au_R$	$\tau_S$	$ au_T$	$ au_U$
$S = 2$ $\theta = 0.0025$ $L = $ $L = $ $L = $	= 40, N = 250 = 40, N = 1000 = 160, N = 250 = 160, N = 1000	2.19 1.82 1.19 0.90	$2.28 \\ 1.77 \\ 1.21 \\ 0.91$	2.25 1.72 1.20 0.89	$2.23 \\ 1.73 \\ 1.19 \\ 0.89$	$2.26 \\ 1.75 \\ 1.20 \\ 0.90$	3.23 2.43 1.39	4.33 3.27 3.35 1.99	5.21 3.46 3.86 1.96	7.86 6.60 7.75 4.75	2.69 1.45 1.57 0.76	$\begin{array}{c} 2.87\\ 1.65\\ 1.74\\ 0.91 \end{array}$	$3.05 \\ 1.71 \\ 1.87 \\ 0.91 $	3.88 2.38 1.53
$S = 8$ $\theta = 0.0025$ $L = 1$ $L = 1$	= 40, N = 250 = 40, N = 1000 = 160, N = 250 = 160, N = 1000	$\begin{array}{c} 1.31 \\ 0.88 \\ 0.68 \\ 0.44 \end{array}$	$\begin{array}{c} 1.31 \\ 0.88 \\ 0.68 \\ 0.44 \end{array}$	$\begin{array}{c} 1.33\\ 0.89\\ 0.68\\ 0.45\end{array}$	$\begin{array}{c} 1.34 \\ 0.88 \\ 0.69 \\ 0.45 \end{array}$	$\begin{array}{c} 1.33 \\ 0.88 \\ 0.69 \\ 0.45 \end{array}$	3.32 2.47 1.38	$\begin{array}{c} 4.50 \\ 3.19 \\ 3.41 \\ 1.94 \end{array}$	4.78 3.15 3.42 1.90	7.70 6.97 7.22 5.04	2.66 1.43 1.53 0.74	$\begin{array}{c} 2.82 \\ 1.61 \\ 1.70 \\ 0.89 \end{array}$	$\begin{array}{c} 2.85 \\ 1.60 \\ 1.71 \\ 0.87 \end{array}$	3.67 2.38 1.55
$S = 2 \qquad L = \\ \theta = 0.01 \qquad L = \\ L = 0.01 \qquad L = \\ L = 0.01 \qquad L = 0$	= 40, N = 250 = 40, N = 1000 = 160, N = 250 = 160, N = 1000	$7.04 \\ 6.44 \\ 3.58 \\ 3.22 \\ 3.22 \\$	6.97 6.27 3.55 3.19	6.96 6.32 3.23 3.23	7.02 6.25 3.62 3.19	7.05 6.33 3.61 3.19	$ \begin{array}{c} 10.06 \\ 7.28 \\ 5.83 \\ 3.90 \end{array} $	$   \begin{array}{c}     14.46 \\     9.86 \\     8.39 \\     5.15   \end{array} $	14.51 9.52 8.61 5.26	28.18 20.01 20.20 12.29	6.04 3.28 3.17 1.67	$7.02 \\ 3.93 \\ 3.86 \\ 1.99 $	$7.11 \\ 3.89 \\ 3.93 \\ 2.01 $	10.05 6.07 6.45 3.61
$S = 8$ $\theta = 0.01$ $L = 1$ $L = 0.01$	= 40, N = 250 = 40, N = 1000 = 160, N = 250 = 160, N = 1000	$3.50 \\ 2.75 \\ 1.77 \\ 1.38 \\ 1.38$	$3.52 \\ 2.74 \\ 1.77 \\ 1.37$	3.51 2.72 1.78 1.38	$3.56 \\ 2.73 \\ 1.80 \\ 1.37 $	$3.50 \\ 2.74 \\ 1.79 \\ 1.38 $	10.06 7.27 5.74 3.88	$   \begin{array}{c}     13.34 \\     9.45 \\     8.28 \\     5.03   \end{array} $	$   \begin{array}{c}     13.76 \\     9.65 \\     8.20 \\     5.06   \end{array} $	26.41 18.46 19.25 11.80	5.93 3.19 3.09 1.64	$6.70 \\ 3.82 \\ 3.75 \\ 1.94$	$6.71 \\ 3.77 \\ 3.69 \\ 1.92$	9.65 5.72 6.20 3.46
Tree U S = 2 $\theta = 0.0025$ L = 1 L = 1 L = 1	= 40, N = 250 = 40, N = 1000 = 160, N = 250 = 160, N = 250	$\begin{array}{c} 2.30 \\ 1.72 \\ 1.18 \\ 0.89 \end{array}$	$2.24 \\ 1.75 \\ 1.18 \\ 0.89$	2.22 1.77 1.18 0.89	$2.29 \\ 1.67 \\ 1.19 \\ 0.90$	$2.20 \\ 1.75 \\ 1.19 \\ 0.90$	4.09 3.06 3.19 1.99	4.45 3.30 3.28 1.93	3.38 2.53 1.47	6.30 5.26 3.03	$3.34 \\ 1.94 \\ 1.12 \\ 1.12$	2.75 1.62 1.67 0.87	2.23 1.23 1.25 0.66	2.67 1.63 0.93 0.93
S = 8 $\theta = 0.0025$ $L = 1$ L = 1	= 40, N = 250 = 40, N = 1000 = 160, N = 250 = 160, N = 1000	$\begin{array}{c} 1.33\\ 0.87\\ 0.68\\ 0.44\end{array}$	$\begin{array}{c} 1.32 \\ 0.86 \\ 0.68 \\ 0.44 \end{array}$	$\begin{array}{c} 1.31 \\ 0.88 \\ 0.68 \\ 0.44 \end{array}$	$\begin{array}{c} 1.34 \\ 0.89 \\ 0.69 \\ 0.45 \end{array}$	$\begin{array}{c} 1.34 \\ 0.89 \\ 0.70 \\ 0.45 \end{array}$	4.02 3.05 3.13 1.96	4.53 3.24 1.93	3.41 2.50 1.46 1.46	5.76 4.46 2.80	3.29 1.93 2.04 1.09	$2.68 \\ 1.56 \\ 1.63 \\ 0.85 \\ 0.85$	$2.11 \\ 1.18 \\ 1.18 \\ 0.64$	$2.41 \\ 1.48 \\ 1.52 \\ 0.86$
$\begin{array}{c} S = 2\\ \theta = 0.01 \\ L = \end{array} \begin{array}{c} L = \\ L = \\ L = \\ L = \end{array}$	= 40, N = 250 = 40, N = 1000 = 160, N = 250 = 160, N = 1000	7.04 6.34 3.62 3.25	7.08 6.49 3.21	6.98 6.27 3.59 3.18	6.76 6.27 3.56 3.18	6.72 6.42 3.60 3.23	12.32 8.94 8.45 4.78	$13.50 \\ 9.46 \\ 8.29 \\ 5.14$	10.51 8.01 6.20 4.21	20.47 13.84 12.91 7.67	8.03 4.53 2.28 2.28	$6.71 \\ 3.78 \\ 3.76 \\ 1.94 $	5.14 2.95 2.78 1.51	6.65 3.84 3.93 2.06
$S = 8$ $\theta = 0.01$ $L = 1$ $L = 0.01$ $L = 0.01$	= 40, N = 250 = 40, N = 1000 = 160, N = 250 = 160, N = 1000	$3.52 \\ 2.71 \\ 1.78 \\ 1.36 $	$3.52 \\ 2.75 \\ 1.78 \\ 1.38 $	3.57 2.73 1.79 1.38	$3.56 \\ 2.75 \\ 1.79 \\ 1.38 $	$3.54 \\ 2.72 \\ 1.80 \\ 1.38 $	12.73 9.13 8.15 4.77	$   \begin{array}{c}     14.34 \\     9.60 \\     8.35 \\     5.00   \end{array} $	10.66 8.06 6.15 4.20	18.47 13.60 11.98 7.13	7.97 4.45 4.56 2.24	$6.62 \\ 3.71 \\ 3.63 \\ 1.87 \\ 1.87 $	4.96 2.86 1.46	$6.13 \\ 3.68 \\ 3.60 \\ 1.91$

		$\theta_A$	$\theta_B$	$\theta_{C}$	$\theta_D$	$\theta_E$	$\theta_R$	$\theta_{S}$	$\theta_T$	$\theta_U$	$\tau_R$	±S	$\tau_T$	$ au_U$
Tree B S = 2 $\theta = 0.0025$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} 0.49\\ 0.28\\ 0.23\\ 0.23\end{array}$	$\begin{array}{c} 0.44\\ 0.40\\ 0.31\\ 0.22\end{array}$	$\begin{array}{c} 0.47\\ 0.41\\ 0.27\\ 0.23\end{array}$	$\begin{array}{c} 0.54\\ 0.43\\ 0.34\\ 0.19\end{array}$	$\begin{array}{c} 0.62 \\ 0.32 \\ 0.23 \\ 0.23 \end{array}$	$\begin{array}{c} 0.70\\ 0.63\\ 0.56\\ 0.36\end{array}$	$\begin{array}{c} 0.66\\ 0.80\\ 0.74\\ 0.44\end{array}$	$\begin{array}{c} 0.93\\ 0.73\\ 0.95\\ 0.47\end{array}$	$ \begin{array}{c} 1.11 \\ 1.12 \\ 1.30 \\ 0.93 \end{array} $	$\begin{array}{c} 0.56 \\ 0.38 \\ 0.34 \\ 0.18 \end{array}$	$\begin{array}{c} 0.60\\ 0.42\\ 0.35\\ 0.23\\ 0.23\end{array}$	$\begin{array}{c} 0.63\\ 0.40\\ 0.24\\ 0.24\end{array}$	$\begin{array}{c} 0.78 \\ 0.56 \\ 0.47 \\ 0.33 \end{array}$
S = 8 $\theta = 0.0025$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} 0.40\\ 0.19\\ 0.19\\ 0.10\end{array}$	$\begin{array}{c} 0.32 \\ 0.25 \\ 0.17 \\ 0.11 \end{array}$	$\begin{array}{c} 0.32 \\ 0.22 \\ 0.17 \\ 0.11 \end{array}$	$\begin{array}{c} 0.31\\ 0.26\\ 0.15\\ 0.11\end{array}$	$\begin{array}{c} 0.32 \\ 0.24 \\ 0.20 \\ 0.11 \end{array}$	$\begin{array}{c} 0.66\\ 0.59\\ 0.60\\ 0.38\\ 0.38\end{array}$	$\begin{array}{c} 0.82 \\ 0.67 \\ 0.77 \\ 0.49 \end{array}$	$\begin{array}{c} 0.78 \\ 0.66 \\ 0.69 \\ 0.46 \end{array}$	$\begin{array}{c} 0.98 \\ 1.09 \\ 1.20 \\ 1.10 \end{array}$	$\begin{array}{c} 0.67 \\ 0.36 \\ 0.37 \\ 0.19 \end{array}$	$\begin{array}{c} 0.70 \\ 0.39 \\ 0.45 \\ 0.24 \end{array}$	$\begin{array}{c} 0.66\\ 0.38\\ 0.42\\ 0.22\end{array}$	$\begin{array}{c} 0.83\\ 0.46\\ 0.51\\ 0.32\end{array}$
S = 2 $\theta = 0.01$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$1.52 \\ 1.61 \\ 0.88 \\ 0.85 \\ 0.85$	$1.60 \\ 1.44 \\ 0.83 \\ 0.66$	$1.45 \\ 1.61 \\ 0.75 \\ 0.81 \\ 0.81$	$1.77 \\ 1.56 \\ 0.88 \\ 0.69 \\ 0.69$	$1.91 \\ 1.81 \\ 1.03 \\ 0.79$	2.61 1.92 1.79 0.99	$\begin{array}{c} 3.57\\ 2.13\\ 2.41\\ 1.35\end{array}$	3.49 2.24 1.88 1.22	5.15 3.94 3.84 2.45	$\begin{array}{c} 1.47 \\ 0.88 \\ 0.83 \\ 0.43 \end{array}$	$1.71 \\ 1.00 \\ 1.04 \\ 0.43 $	$\begin{array}{c} 1.56\\ 0.97\\ 0.90\\ 0.44\end{array}$	2.04 1.21 1.21 0.73
S = 8 $\theta = 0.01$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} 0.86 \\ 0.71 \\ 0.42 \\ 0.35 \end{array}$	$\begin{array}{c} 0.85 \\ 0.72 \\ 0.44 \\ 0.39 \end{array}$	$\begin{array}{c} 0.94 \\ 0.76 \\ 0.49 \\ 0.38 \end{array}$	$\begin{array}{c} 0.80\\ 0.67\\ 0.47\\ 0.38\\ 0.38\end{array}$	$\begin{array}{c} 0.88\\ 0.67\\ 0.52\\ 0.34\end{array}$	$2.56 \\ 1.61 \\ 1.53 \\ 0.99$	2.98 2.29 1.96 1.10	2.83 2.33 1.18	3.94 4.03 3.32 2.77	$\begin{array}{c} 1.63\\ 0.78\\ 0.91\\ 0.45\end{array}$	$1.67 \\ 0.95 \\ 1.00 \\ 0.50 \\ $	$1.57 \\ 1.09 \\ 0.98 \\ 0.45$	$1.75 \\ 1.29 \\ 1.00 \\ 0.80$
Tree U S = 2 $\theta = 0.0025$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} 0.63\\ 0.44\\ 0.30\\ 0.26\end{array}$	$\begin{array}{c} 0.50\\ 0.46\\ 0.28\\ 0.23\end{array}$	$\begin{array}{c} 0.53\\ 0.48\\ 0.26\\ 0.24\end{array}$	$\begin{array}{c} 0.67\\ 0.46\\ 0.29\\ 0.24\end{array}$	$\begin{array}{c} 0.59\\ 0.43\\ 0.31\\ 0.23\end{array}$	$\begin{array}{c} 0.62 \\ 0.67 \\ 0.64 \\ 0.55 \end{array}$	$\begin{array}{c} 0.66\\ 0.64\\ 0.64\\ 0.47\end{array}$	$\begin{array}{c} 0.66 \\ 0.67 \\ 0.45 \\ 0.35 \end{array}$	$\begin{array}{c} 0.95 \\ 1.03 \\ 0.99 \\ 0.74 \end{array}$	$\begin{array}{c} 0.69\\ 0.47\\ 0.39\\ 0.29\end{array}$	$\begin{array}{c} 0.61 \\ 0.36 \\ 0.34 \\ 0.22 \end{array}$	$\begin{array}{c} 0.51\\ 0.28\\ 0.32\\ 0.16\end{array}$	$\begin{array}{c} 0.52 \\ 0.34 \\ 0.38 \\ 0.25 \end{array}$
S = 8 $\theta = 0.0025$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} 0.39\\ 0.22\\ 0.21\\ 0.12\end{array}$	$\begin{array}{c} 0.32 \\ 0.23 \\ 0.16 \\ 0.11 \end{array}$	$\begin{array}{c} 0.29\\ 0.22\\ 0.17\\ 0.11\end{array}$	$\begin{array}{c} 0.33\\ 0.25\\ 0.17\\ 0.11\\ 0.11\end{array}$	$\begin{array}{c} 0.31\\ 0.21\\ 0.16\\ 0.11\end{array}$	$\begin{array}{c} 0.65 \\ 0.76 \\ 0.65 \\ 0.59 \end{array}$	$\begin{array}{c} 0.91 \\ 0.89 \\ 0.66 \\ 0.51 \end{array}$	$\begin{array}{c} 0.75 \\ 0.53 \\ 0.52 \\ 0.35 \end{array}$	$\begin{array}{c} 0.92 \\ 0.88 \\ 1.21 \\ 0.59 \end{array}$	$\begin{array}{c} 0.71 \\ 0.44 \\ 0.44 \\ 0.31 \end{array}$	$\begin{array}{c} 0.62 \\ 0.39 \\ 0.36 \\ 0.24 \end{array}$	$\begin{array}{c} 0.52 \\ 0.27 \\ 0.27 \\ 0.16 \end{array}$	$\begin{array}{c} 0.49\\ 0.34\\ 0.32\\ 0.20\end{array}$
S = 2 $\theta = 0.01$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 250 \end{array}$	$1.96 \\ 1.62 \\ 0.91 \\ 0.81 $	$\begin{array}{c} 1.78 \\ 1.78 \\ 0.98 \\ 0.83 \end{array}$	$1.76 \\ 1.74 \\ 0.96 \\ 0.82 $	$1.67 \\ 1.61 \\ 0.87 \\ 0.84 \\ 0.84$	$1.60 \\ 1.43 \\ 0.79 \\ 0.64$	2.67 2.33 2.24 1.17	$3.22 \\ 2.10 \\ 1.91 \\ 1.19$	$2.28 \\ 1.90 \\ 1.47 \\ 1.12 $	4.09 3.67 2.65 1.81	$1.98 \\ 1.05 \\ 1.21 \\ 0.58 $	$\begin{array}{c} 1.73\\ 0.84\\ 0.79\\ 0.42\end{array}$	$\begin{array}{c} 1.18 \\ 0.73 \\ 0.67 \\ 0.41 \end{array}$	$1.43 \\ 0.92 \\ 0.56 \\ 0.56$
S = 8 $\theta = 0.01$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} 0.88\\ 0.72\\ 0.37\\ 0.35\\ 0.35\end{array}$	$\begin{array}{c} 0.72 \\ 0.70 \\ 0.45 \\ 0.31 \end{array}$	$\begin{array}{c} 0.88\\ 0.74\\ 0.46\\ 0.34\end{array}$	$\begin{array}{c} 0.83\\ 0.64\\ 0.50\\ 0.32\end{array}$	$\begin{array}{c} 0.94 \\ 0.70 \\ 0.45 \\ 0.37 \end{array}$	2.55 2.57 2.34 1.29	$\begin{array}{c} 3.28\\ 2.37\\ 2.21\\ 1.38\end{array}$	2.33 2.14 1.42 1.07	$3.08 \\ 2.97 \\ 3.09 \\ 1.81 $	$     \begin{array}{c}       1.93 \\       1.26 \\       1.32 \\       0.59     \end{array} $	$\begin{array}{c} 1.65\\ 0.91\\ 1.04\\ 0.47\end{array}$	$\begin{array}{c} 1.31 \\ 0.70 \\ 0.37 \\ 0.37 \end{array}$	$ \begin{array}{c} 1.37 \\ 0.86 \\ 0.81 \\ 0.50 \end{array} $

	φz	$\begin{array}{c} 0.365 \\ 0.236 \\ 0.180 \\ 0.121 \end{array}$	$\begin{array}{c} 0.302 \\ 0.218 \\ 0.151 \\ 0.112 \end{array}$	$\begin{array}{c} 0.240 \\ 0.227 \\ 0.124 \\ 0.116 \end{array}$	$\begin{array}{c} 0.217\\ 0.213\\ 0.113\\ 0.109\end{array}$	$\begin{array}{c} 0.316 \\ 0.232 \\ 0.154 \\ 0.120 \end{array}$	$\begin{array}{c} 0.261\\ 0.215\\ 0.136\\ 0.112\end{array}$	$\begin{array}{c} 0.229\\ 0.219\\ 0.120\\ 0.115\end{array}$	$\begin{array}{c} 0.218\\ 0.210\\ 0.113\\ 0.110\end{array}$
	φγ	$\begin{array}{c} 0.343\\ 0.265\\ 0.178\\ 0.138\end{array}$	$\begin{array}{c} 0.303\\ 0.253\\ 0.157\\ 0.130\\ 0.130\end{array}$	$\begin{array}{c} 0.272 \\ 0.262 \\ 0.140 \\ 0.134 \end{array}$	$\begin{array}{c} 0.254\\ 0.243\\ 0.131\\ 0.125\end{array}$	$\begin{array}{c} 0.493\\ 0.305\\ 0.254\\ 0.156\end{array}$	$\begin{array}{c} 0.425 \\ 0.278 \\ 0.219 \\ 0.140 \end{array}$	$\begin{array}{c} 0.316\\ 0.275\\ 0.159\\ 0.140\end{array}$	$\begin{array}{c} 0.281 \\ 0.253 \\ 0.143 \\ 0.129 \end{array}$
	$\tau_W$	$3.94 \\ 1.88 \\ 1.86 \\ 0.96$	$2.59 \\ 1.40 \\ 1.20 \\ 0.69$	7.76 4.78 3.85 2.40	5.60 3.62 2.75 1.79	$3.74 \\ 1.81 \\ 1.69 \\ 0.95$	$2.30 \\ 1.39 \\ 1.13 \\ 0.68$	7.68 3.86 2.42	$5.40 \\ 3.56 \\ 2.70 \\ 1.76$
	$\tau_X$	2.75 1.51 1.39 0.79	$ \begin{array}{c} 1.93 \\ 1.09 \\ 0.95 \\ 0.56 \end{array} $	6.11 3.86 3.21 1.98	4.57 3.01 2.26 1.47	2.97 1.50 1.50 0.79	$2.12 \\ 1.15 \\ 1.06 \\ 0.57 $	6.37 3.81 3.21 1.96	4.66 3.01 2.30 1.49
	$\tau_U$	$\begin{array}{c} 4.93\\ 2.76\\ 3.32\\ 1.84\end{array}$	4.46 2.63 2.99 1.62	11.77 6.57 7.23 7.23 4.01	10.52 5.98 6.84 3.74	2.63 1.60 1.75 0.98	$2.49 \\ 1.50 \\ 1.60 \\ 0.90 $	6.97 3.97 4.13 2.15	6.16 3.63 3.75 1.98
5S)	$ au_T$	$\begin{array}{c} 2.98 \\ 1.73 \\ 1.89 \\ 0.97 \end{array}$	$2.90 \\ 1.66 \\ 1.78 \\ 0.91 $	7.37 4.07 4.10 2.06	6.95 3.82 3.86 1.94	$\begin{array}{c} 3.11 \\ 1.53 \\ 1.68 \\ 0.83 \end{array}$	2.87 1.41 1.57 0.76	6.68 3.74 3.51 1.89	5.97 3.39 3.19 1.72
s and a	$\tau_S$	$3.42 \\ 1.92 \\ 2.10 \\ 1.09$	$3.22 \\ 1.84 \\ 1.04 \\ 1.04$	8.06 4.70 2.34	7.57 4.38 4.37 2.23	2.85 1.74 1.80 0.96	$2.76 \\ 1.66 \\ 1.73 \\ 0.92$	7.06 3.97 4.05 2.03	$6.83 \\ 3.88 \\ 3.88 \\ 1.98 \\ $
$^{-3}$ for $\theta$	$ au_R$	$2.92 \\ 1.57 \\ 1.73 \\ 0.83$	$2.78 \\ 1.51 \\ 1.68 \\ 0.80 $	6.51 3.55 3.45 1.81	6.26 3.43 3.35 1.75	3.97 2.14 1.28	$3.71 \\ 2.11 \\ 2.25 \\ 1.20 $	8.81 5.22 2.53	8.28 4.89 2.46
8 (×10 <sup>-</sup>	$\theta_{\mathrm{Z}}$	5.35 4.60 3.33	4.29 3.59 2.30	$17.15 \\ 17.56 \\ 13.47 \\ 11.13 \\ 11.13$	15.18 14.03 9.99 7.91	4.92 4.78 4.61 3.53	4.61 3.93 2.39 2.39	$\begin{array}{c} 19.10\\ 17.31\\ 13.68\\ 10.81\\ 10.81 \end{array}$	15.17 13.20 9.58 7.85
f figure	$\theta_W$	4.77 3.59 2.28	3.89 2.72 2.48 1.58	$15.30 \\ 11.88 \\ 9.38 \\ 6.88 \\ 6.88 \\ 0.88 $	10.60 9.56 6.37 5.02	4.43 3.42 2.19 2.19	3.63 2.84 1.58 1.58	13.65 11.48 9.00 6.44	$ \begin{array}{c} 11.04 \\ 9.21 \\ 6.45 \\ 4.92 \end{array} $
o slabou	$\theta_{Y}$	5.36 4.60 3.63 3.63	4.93 4.18 2.75	19.07 18.32 15.16 12.83	16.77 14.23 11.39 8.68	5.45 4.94 3.88 3.88	5.48 4.46 2.86 2.86	$\begin{array}{c} 20.29\\ 18.63\\ 15.25\\ 13.43\end{array}$	$18.06 \\ 16.76 \\ 12.60 \\ 9.76 \\ 9.76 \\ \end{array}$
MSci n	$\theta_X$	4.42 3.24 1.99	3.52 2.65 1.46	$13.23 \\ 10.55 \\ 8.31 \\ 5.98 $	10.70 8.64 5.84 4.52	$\begin{array}{c} 4.80\\ 3.52\\ 2.29\end{array}$	3.98 2.99 1.58	$15.05 \\ 12.17 \\ 9.19 \\ 6.80$	11.51 9.69 5.06
rs in the	$\theta_U$	8.88 7.37 5.86	8.34 7.09 4.74 4.74	$\begin{array}{c} 31.33\\ 20.44\\ 21.79\\ 13.49\end{array}$	27.90 17.91 20.55 12.41	6.17 4.54 3.24 3.24	6.09 4.62 3.07	22.22 14.46 14.06 8.13	18.71 13.11 12.69 7.57
aramete	$\theta_T$	4.85 3.43 3.76 2.16	4.75 3.35 3.52 2.04	$15.07 \\ 10.30 \\ 9.18 \\ 5.36$	$   \begin{array}{c}     14.61 \\     9.71 \\     8.75 \\     5.17 \\   \end{array} $	4.08 2.78 1.72	4.05 2.69 1.62	11.97 9.27 7.23 4.91	$11.76 \\ 8.80 \\ 6.83 \\ 4.59 \\ 4.59$
the 21 p	$\theta_S$	4.67 3.57 2.26 2.26	4.58 3.60 2.24	$14.96 \\ 10.91 \\ 9.84 \\ 5.78$	$14.16 \\ 10.45 \\ 9.47 \\ 5.56$	4.65 3.73 3.67 2.14	4.53 3.48 3.53 2.11	$   \begin{array}{c}     14.80 \\     9.22 \\     5.25   \end{array} $	$13.95 \\ 10.08 \\ 8.65 \\ 5.26$
idth for	$\theta_R$	3.60 2.65 1.53	3.40 2.54 1.47	10.88 7.93 6.32 4.18	10.56 7.65 6.23 4.08	4.48 3.11 2.22	4.30 3.31 2.12	$\begin{array}{c} 13.29\\ 9.77\\ 9.08\\ 5.23\end{array}$	12.28 9.66 8.73 5.09
D CI w	$\theta_E$	2.85 2.04 1.43 1.02	$\begin{array}{c} 1.50\\ 0.95\\ 0.76\\ 0.48\end{array}$	8.32 7.01 3.54	3.75 2.81 1.89 1.42	2.84 2.04 1.38 1.02	$\begin{array}{c} 1.53\\ 0.93\\ 0.76\\ 0.47\end{array}$	8.18 7.17 4.08 3.57	$3.76 \\ 2.88 \\ 1.88 \\ 1.43 $
5% HP	$\theta_D$	2.85 2.09 1.46 1.01	$\begin{array}{c} 1.49\\ 0.94\\ 0.77\\ 0.48\end{array}$	$     \begin{array}{r}       8.18 \\       7.15 \\       4.10 \\       3.58 \\     \end{array} $	$\begin{array}{c} 3.80\\ 2.83\\ 1.90\\ 1.43\end{array}$	3.08 2.06 1.52 1.00	$\begin{array}{c} 1.52 \\ 0.94 \\ 0.76 \\ 0.47 \end{array}$	8.29     7.18     4.09 $3.56 $	$3.77 \\ 2.88 \\ 1.89 \\ 1.43 $
erage 9	$\theta_C$	$2.70 \\ 2.00 \\ 1.36 \\ 1.00$	$\begin{array}{c} 1.43\\ 0.94\\ 0.74\\ 0.47\end{array}$	8.22 7.23 4.04 3.57	3.69 2.82 1.86 1.42	2.64 1.94 1.38 1.01	$\begin{array}{c} 1.46 \\ 0.92 \\ 0.75 \\ 0.46 \end{array}$	$7.79 \\ 7.22 \\ 4.00 \\ 3.54$	$3.73 \\ 2.82 \\ 1.86 \\ 1.42$
S3: Av	$\theta_B$	2.82 2.06 1.44 1.00	$\begin{array}{c} 1.51 \\ 0.94 \\ 0.76 \\ 0.47 \end{array}$	$8.14 \\ 7.10 \\ 4.03 \\ 3.57 \\$	$3.70 \\ 2.85 \\ 1.88 \\ 1.43 $	2.94 2.08 1.47 1.02	$\begin{array}{c} 1.48 \\ 0.93 \\ 0.75 \\ 0.47 \end{array}$	8.20 7.15 3.54	$3.78 \\ 2.85 \\ 1.90 \\ 1.42$
Table	$ heta_A$	2.21 1.74 1.19 0.90	$\begin{array}{c} 1.33\\ 0.88\\ 0.68\\ 0.44\end{array}$	$\begin{array}{c} 6.85 \\ 6.31 \\ 3.59 \\ 3.20 \end{array}$	3.51 2.74 1.78 1.38	2.25 1.74 0.88	$1.34 \\ 0.86 \\ 0.68 \\ 0.44 \\ 0.44$	6.96 6.25 3.59 3.21	$3.46 \\ 2.74 \\ 1.77 \\ 1.37 \\ $
		$\begin{array}{c} L=40, N=250\\ L=40, N=1000\\ L=160, N=250\\ L=160, N=250\end{array}$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{l} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 250 \\ L = 1000 \end{array}$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 250 \end{array}$
	£	Tree B S = 2 $\theta = 0.0025$	S = 8 $\theta = 0.0025$	S = 2 $\theta = 0.01$	S = 8 $\theta = 0.01$	Tree U S = 2 $\theta = 0.0025$	S = 8 $\theta = 0.0025$	S = 2 heta = 0.01	$\begin{array}{c} S=8\\ \theta=0.01 \end{array}$

	φz	$\begin{array}{c} 0.076 \\ 0.050 \\ 0.043 \\ 0.032 \end{array}$	$\begin{array}{c} 0.064 \\ 0.055 \\ 0.044 \\ 0.030 \end{array}$	$\begin{array}{c} 0.063\\ 0.061\\ 0.032\\ 0.031\end{array}$	$\begin{array}{c} 0.049 \\ 0.060 \\ 0.027 \\ 0.028 \end{array}$	$\begin{array}{c} 0.072 \\ 0.059 \\ 0.032 \\ 0.032 \end{array}$	$\begin{array}{c} 0.068 \\ 0.062 \\ 0.032 \\ 0.030 \end{array}$	$\begin{array}{c} 0.056 \\ 0.059 \\ 0.027 \\ 0.026 \end{array}$	$\begin{array}{c} 0.058\\ 0.052\\ 0.034\\ 0.028\end{array}$
	φ	$\begin{array}{c} 0.075 \\ 0.074 \\ 0.046 \\ 0.036 \end{array}$	$\begin{array}{c} 0.082\\ 0.060\\ 0.042\\ 0.035\end{array}$	$\begin{array}{c} 0.068\\ 0.065\\ 0.036\\ 0.033\end{array}$	$\begin{array}{c} 0.065 \\ 0.061 \\ 0.033 \\ 0.034 \end{array}$	$\begin{array}{c} 0.115\\ 0.081\\ 0.063\\ 0.043\end{array}$	$\begin{array}{c} 0.116\\ 0.067\\ 0.057\\ 0.033\end{array}$	$\begin{array}{c} 0.090\\ 0.068\\ 0.045\\ 0.034\end{array}$	$\begin{array}{c} 0.074 \\ 0.057 \\ 0.040 \\ 0.031 \end{array}$
	$\tau_W$	$\begin{array}{c} 1.12 \\ 0.50 \\ 0.52 \\ 0.26 \end{array}$	$\begin{array}{c} 0.67 \\ 0.38 \\ 0.33 \\ 0.21 \end{array}$	$1.99 \\ 1.56 \\ 1.03 \\ 0.61$	$1.59 \\ 1.06 \\ 0.66 \\ 0.49$	$\begin{array}{c} 1.13\\ 0.53\\ 0.24\\ 0.24\end{array}$	$\begin{array}{c} 0.60\\ 0.37\\ 0.28\\ 0.20\\ 0.20 \end{array}$	$2.29 \\ 1.38 \\ 1.02 \\ 0.57$	$\begin{array}{c} 1.39\\ 0.97\\ 0.76\\ 0.43\end{array}$
	$\tau_X$	$\begin{array}{c} 0.75 \\ 0.42 \\ 0.38 \\ 0.19 \end{array}$	$\begin{array}{c} 0.49\\ 0.30\\ 0.26\\ 0.14\end{array}$	$1.62 \\ 1.24 \\ 0.82 \\ 0.55 $	$\begin{array}{c} 1.20\\ 0.89\\ 0.61\\ 0.37\end{array}$	$\begin{array}{c} 0.76 \\ 0.39 \\ 0.37 \\ 0.20 \end{array}$	$\begin{array}{c} 0.60 \\ 0.26 \\ 0.30 \\ 0.13 \end{array}$	$\begin{array}{c} 1.60\\ 1.17\\ 0.90\\ 0.53\end{array}$	$\begin{array}{c} 1.14 \\ 0.84 \\ 0.64 \\ 0.41 \end{array}$
id $\tau_{\rm S})$	$\tau_U$	$\begin{array}{c} 0.90\\ 0.59\\ 0.52\\ 0.35\\ 0.35\end{array}$	$\begin{array}{c} 0.85 \\ 0.50 \\ 0.58 \\ 0.58 \\ 0.29 \end{array}$	$2.22 \\ 1.35 \\ 1.24 \\ 0.94$	$2.00 \\ 1.31 \\ 1.34 \\ 0.83 $	$\begin{array}{c} 0.57 \\ 0.33 \\ 0.33 \\ 0.21 \end{array}$	$\begin{array}{c} 0.54 \\ 0.36 \\ 0.31 \\ 0.21 \end{array}$	$\begin{array}{c} 1.46 \\ 0.93 \\ 1.03 \\ 0.53 \end{array}$	$1.39 \\ 1.00 \\ 0.91 \\ 0.54$
or 0s ar	$\tau_T$	$\begin{array}{c} 0.58\\ 0.41\\ 0.39\\ 0.25\end{array}$	$\begin{array}{c} 0.54 \\ 0.36 \\ 0.37 \\ 0.21 \end{array}$	$\begin{array}{c} 1.68\\ 0.96\\ 0.53\\ 0.53\end{array}$	$1.74 \\ 1.00 \\ 0.93 \\ 0.59 \\ 0.59$	$\begin{array}{c} 0.66 \\ 0.38 \\ 0.36 \\ 0.20 \end{array}$	$\begin{array}{c} 0.63 \\ 0.35 \\ 0.40 \\ 0.19 \end{array}$	$\begin{array}{c} 1.48 \\ 0.88 \\ 0.97 \\ 0.44 \end{array}$	$\begin{array}{c} 1.41 \\ 0.94 \\ 0.74 \\ 0.42 \end{array}$
$10^{-3}$ fc	$\tau_S$	$\begin{array}{c} 0.74 \\ 0.44 \\ 0.48 \\ 0.26 \end{array}$	$\begin{array}{c} 0.66\\ 0.43\\ 0.44\\ 0.24\end{array}$	2.03 1.08 1.19 0.62	$ \begin{array}{c} 1.98\\ 1.13\\ 1.18\\ 0.57 \end{array} $	$\begin{array}{c} 0.66\\ 0.40\\ 0.39\\ 0.26\end{array}$	$\begin{array}{c} 0.66\\ 0.39\\ 0.36\\ 0.22\end{array}$	$1.66 \\ 1.17 \\ 1.01 \\ 0.59 \\ 0.59$	$ \begin{array}{c} 1.31 \\ 0.99 \\ 1.04 \\ 0.52 \end{array} $
e 8 (×	$ au_R$	$\begin{array}{c} 0.71 \\ 0.35 \\ 0.40 \\ 0.18 \end{array}$	$\begin{array}{c} 0.63\\ 0.33\\ 0.42\\ 0.19\end{array}$	$\begin{array}{c} 1.71 \\ 0.87 \\ 0.83 \\ 0.40 \end{array}$	$\begin{array}{c} 1.54 \\ 0.92 \\ 0.86 \\ 0.49 \end{array}$	$\begin{array}{c} 0.86\\ 0.57\\ 0.51\\ 0.30\end{array}$	$\begin{array}{c} 0.74 \\ 0.42 \\ 0.44 \\ 0.32 \end{array}$	2.09 1.24 1.23 0.67	$ \begin{array}{c} 1.96 \\ 1.18 \\ 1.38 \\ 0.63 \end{array} $
of figur	$\theta_{\rm Z}$	$\begin{array}{c} 0.58 \\ 0.79 \\ 0.81 \\ 0.82 \end{array}$	$\begin{array}{c} 0.64 \\ 0.74 \\ 0.69 \\ 0.60 \end{array}$	2.48 3.88 2.78 3.31	3.37 3.06 2.52 1.87	$\begin{array}{c} 0.47\\ 0.77\\ 1.30\\ 0.78\\ 0.78\end{array}$	$\begin{array}{c} 0.75 \\ 0.90 \\ 0.74 \\ 0.59 \end{array}$	2.98 3.61 3.05 2.74	2.93 2.86 2.27 2.09
nodels	$\theta_W$	$\begin{array}{c} 0.70\\ 0.73\\ 0.66\\ 0.60\end{array}$	$\begin{array}{c} 0.83\\ 0.73\\ 0.64\\ 0.45\end{array}$	3.14 2.49 2.15 1.81	$3.15 \\ 2.30 \\ 1.76 \\ 1.41$	$\begin{array}{c} 0.71\\ 0.73\\ 0.74\\ 0.49\end{array}$	$\begin{array}{c} 0.65 \\ 0.69 \\ 0.54 \\ 0.33 \end{array}$	2.67 2.87 1.46	2.56 2.35 1.45 1.14
MSci 1	$\theta_{Y}$	$\begin{array}{c} 0.65 \\ 0.80 \\ 0.84 \\ 0.74 \end{array}$	$\begin{array}{c} 0.83\\ 0.74\\ 0.79\\ 0.58\end{array}$	2.65 3.78 3.07 3.28	$\begin{array}{c} 3.33\\ 2.43\\ 2.71\\ 1.87\end{array}$	$\begin{array}{c} 0.51\\ 0.71\\ 0.79\\ 0.94\end{array}$	$\begin{array}{c} 0.96\\ 0.86\\ 1.03\\ 0.61\end{array}$	3.00 2.81 2.84 2.67	3.54 2.97 3.16 2.62
in the	$\theta_X$	$\begin{array}{c} 0.78 \\ 0.66 \\ 0.72 \\ 0.51 \end{array}$	$\begin{array}{c} 0.73 \\ 0.67 \\ 0.55 \\ 0.43 \end{array}$	3.06 2.80 1.46	2.34 1.43 1.13	$\begin{array}{c} 0.86\\ 0.81\\ 0.85\\ 0.59\end{array}$	$\begin{array}{c} 0.70 \\ 0.80 \\ 0.70 \\ 0.42 \end{array}$	3.05 3.23 2.50 1.77	2.91 2.32 1.75 1.31
ameters	$\theta_U$	$1.10 \\ 1.53 \\ 1.18 \\ 1.13 \\ 1.13$	$\begin{array}{c} 0.98\\ 1.26\\ 1.01\\ 0.83\end{array}$	$\begin{array}{c} 6.00\\ 3.49\\ 3.98\\ 3.11\end{array}$	3.95 3.05 3.27 2.52	$\begin{array}{c} 0.83\\ 0.83\\ 0.97\\ 0.67\end{array}$	$1.00 \\ 1.03 \\ 0.85 \\ 0.62 $	4.39 3.02 3.23 1.88	3.64 3.24 2.20 2.20
21 para	$\theta_T$	$\begin{array}{c} 0.75 \\ 0.76 \\ 0.79 \\ 0.57 \end{array}$	$\begin{array}{c} 0.70\\ 0.58\\ 0.68\\ 0.68\\ 0.46\end{array}$	2.47 2.43 1.32	$3.71 \\ 2.24 \\ 2.10 \\ 1.50 $	$\begin{array}{c} 0.76 \\ 0.64 \\ 0.57 \\ 0.43 \end{array}$	$\begin{array}{c} 0.69 \\ 0.62 \\ 0.58 \\ 0.37 \end{array}$	2.62 2.12 1.80 1.27	2.61 2.27 1.56 1.02
for the	$\theta_S$	$\begin{array}{c} 0.76 \\ 0.69 \\ 0.74 \\ 0.51 \end{array}$	$\begin{array}{c} 0.62 \\ 0.89 \\ 0.60 \\ 0.54 \end{array}$	3.22 2.39 1.55	$3.10 \\ 2.41 \\ 2.41 \\ 1.37 $	$\begin{array}{c} 0.61 \\ 0.74 \\ 0.71 \\ 0.57 \end{array}$	$\begin{array}{c} 0.67\\ 0.77\\ 0.74\\ 0.49\end{array}$	2.92 2.40 2.17 1.47	$3.04 \\ 2.60 \\ 1.28 \\ 1.28$
(MSE)	$\theta_R$	$\begin{array}{c} 0.73 \\ 0.57 \\ 0.65 \\ 0.35 \end{array}$	$\begin{array}{c} 0.67 \\ 0.61 \\ 0.62 \\ 0.35 \end{array}$	$2.50 \\ 1.97 \\ 1.50 \\ 1.03$	$2.79 \\ 1.82 \\ 1.58 \\ 1.08 $	$\begin{array}{c} 0.72 \\ 0.68 \\ 0.65 \\ 0.50 \end{array}$	$\begin{array}{c} 0.55 \\ 0.74 \\ 0.69 \\ 0.53 \end{array}$	2.58 2.52 2.19 1.32	2.83 2.39 2.46 1.30
error (R	$\theta_E$	$\begin{array}{c} 0.66 \\ 0.52 \\ 0.39 \\ 0.27 \end{array}$	$\begin{array}{c} 0.38\\ 0.25\\ 0.18\\ 0.14\end{array}$	$2.34 \\ 1.75 \\ 1.11 \\ 0.82 $	$\begin{array}{c} 0.86\\ 0.81\\ 0.53\\ 0.38\\ 0.38\end{array}$	$\begin{array}{c} 0.70 \\ 0.46 \\ 0.38 \\ 0.22 \end{array}$	$\begin{array}{c} 0.37 \\ 0.24 \\ 0.17 \\ 0.12 \end{array}$	$1.93 \\ 1.75 \\ 0.94 \\ 0.92$	$\begin{array}{c} 0.96\\ 0.69\\ 0.47\\ 0.36\end{array}$
quare e	$\theta_D$	$\begin{array}{c} 0.65 \\ 0.56 \\ 0.32 \\ 0.25 \end{array}$	$\begin{array}{c} 0.31 \\ 0.24 \\ 0.18 \\ 0.13 \end{array}$	$2.02 \\ 1.81 \\ 0.97 \\ 1.01 $	$\begin{array}{c} 0.99\\ 0.65\\ 0.52\\ 0.34\end{array}$	$\begin{array}{c} 0.65 \\ 0.52 \\ 0.40 \\ 0.28 \end{array}$	$\begin{array}{c} 0.38\\ 0.23\\ 0.18\\ 0.12\end{array}$	2.06 1.97 1.08 0.98	$\begin{array}{c} 0.96\\ 0.78\\ 0.46\\ 0.39\end{array}$
mean s	$\theta_{C}$	$\begin{array}{c} 0.74 \\ 0.51 \\ 0.35 \\ 0.24 \end{array}$	$\begin{array}{c} 0.36 \\ 0.23 \\ 0.17 \\ 0.12 \end{array}$	$2.23 \\ 1.68 \\ 0.91 \\ 0.91 \\ 0.91$	$\begin{array}{c} 0.89\\ 0.67\\ 0.44\\ 0.41\\ 0.41 \end{array}$	$\begin{array}{c} 0.65 \\ 0.44 \\ 0.37 \\ 0.28 \end{array}$	$\begin{array}{c} 0.36 \\ 0.26 \\ 0.19 \\ 0.12 \end{array}$	2.11 1.83 1.11 0.84	$\begin{array}{c} 1.08\\ 0.70\\ 0.49\\ 0.33\end{array}$
: Root	$\theta_B$	$\begin{array}{c} 0.70 \\ 0.55 \\ 0.39 \\ 0.29 \\ 0.29 \end{array}$	$\begin{array}{c} 0.40 \\ 0.25 \\ 0.20 \\ 0.13 \end{array}$	2.13 1.70 1.07 0.94	$\begin{array}{c} 0.89\\ 0.83\\ 0.44\\ 0.38\end{array}$	$\begin{array}{c} 0.67 \\ 0.53 \\ 0.36 \\ 0.26 \end{array}$	$\begin{array}{c} 0.38\\ 0.24\\ 0.18\\ 0.14\end{array}$	2.17 2.09 1.09 0.89	$\begin{array}{c} 0.98\\ 0.67\\ 0.52\\ 0.38\\ 0.38\end{array}$
able S4	$ heta_{ m A}$	$\begin{array}{c} 0.58 \\ 0.41 \\ 0.31 \\ 0.23 \end{array}$	$\begin{array}{c} 0.32 \\ 0.23 \\ 0.17 \\ 0.10 \end{array}$	$1.61 \\ 1.79 \\ 0.78 \\ 0.94$	$\begin{array}{c} 0.81 \\ 0.67 \\ 0.47 \\ 0.32 \end{array}$	$\begin{array}{c} 0.53\\ 0.48\\ 0.30\\ 0.19\end{array}$	$\begin{array}{c} 0.35 \\ 0.23 \\ 0.16 \\ 0.11 \end{array}$	1.77 1.49 0.85 0.75	$\begin{array}{c} 0.85 \\ 0.75 \\ 0.44 \\ 0.35 \end{array}$
T		$\begin{array}{c} L=40, N=250\\ L=40, N=1000\\ L=160, N=250\\ L=160, N=1000\end{array}$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} L=40, N=250\\ L=40, N=1000\\ L=160, N=250\\ L=160, N=1000 \end{array}$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{l} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$	$\begin{array}{c} L = 40, N = 250 \\ L = 40, N = 1000 \\ L = 160, N = 250 \\ L = 160, N = 1000 \end{array}$
	Т В	$\begin{array}{l} \begin{array}{l} \text{Illeb B} \\ S = 2 \\ \theta = 0.0025 \end{array}$	$\substack{S=8\\ \theta=0.0025}$	$\begin{array}{c} S=2\\ \theta=0.01 \end{array}$	$\begin{array}{c} S = 8\\ \theta = 0.01 \end{array}$	Tree U S = 2 $\theta = 0.0025$	$\begin{array}{l} S = 8\\ \theta = 0.0025 \end{array}$	$\begin{array}{c} S=2\\ \theta=0.01 \end{array}$	S = 8 $\theta = 0.01$
I	I								