MoG model with $d = 5$ , $q = 3$ , and $n = m = 2 \cdot 10^4$						
	$\mu$ -deformation			$\Sigma_{ii}$ -deformation		
Statistic	$\epsilon_{95\%\mathrm{CL}}$	$\epsilon_{99\%\mathrm{CL}}$	t (s)	$\epsilon_{95\%\mathrm{CL}}$	$\epsilon_{99\%\mathrm{CL}}$	t (s)
$t_{ m SW}$	$\begin{array}{c} 0.06429^{+0.021}_{-0.021} \\ \textbf{0.00323}^{+0.0012}_{-0.0013} \\ 0.03829^{+0.013}_{-0.013} \\ 0.07491^{+0.041}_{-0.022} \end{array}$	$0.08858^{+0.021}_{-0.02} \\ 0.00453^{+0.0011}_{-0.0012} \\ 0.05211^{+0.013}_{-0.012}$	1309	$ \begin{array}{c} 0.02167^{+0.0065}_{-0.0076} \\ \textbf{0.00187}^{+0.00049}_{-0.00058} \\ 0.01144^{+0.0027}_{-0.0035} \end{array} $	$\begin{array}{c} 0.03029^{+0.0061}_{-0.0067} \\ 0.00247^{+0.00044}_{-0.00049} \\ 0.01578^{+0.0026}_{-0.0026} \\ 0.03187^{+0.0055}_{-0.0054} \\ \end{array}$	1429
$t_{\overline{ ext{KS}}}$	$0.00323^{+0.0012}_{-0.0013}$	$0.00453^{+0.0011}_{-0.0012}$	1306	$0.00187^{+0.00049}_{-0.00058}$	$0.00247^{+0.00044}_{-0.00049}$	1364
$t_{ m SKS}$	$0.03829^{+0.013}_{-0.013}$	$0.05211^{+0.013}_{-0.012}$	1567	$0.01144^{+0.0027}_{-0.0035}$	$0.01578^{+0.0024}_{-0.0026}$	1687
$t_{ m FGD}$	$0.07491^{+0.041}_{-0.029}$	$0.10089^{+0.039}_{-0.028}$	1266	$0.02357^{+0.0003}_{-0.007}$	$0.03187^{+0.0055}_{-0.0054}$	<b>1324</b>
$t_{ m MMD}$	$0.04409^{+0.023}_{-0.016}$	$0.05957^{+0.022}_{-0.016}$	1908	$0.01045^{+0.0043}_{-0.0036}$	$0.01406^{+0.004}_{-0.0033}$	2122
$t_{ m NPLM}$		0.0000400018	9080		$0.00183^{+0.00047}_{-0.00045}$	9731
$t_{\rm LLR}$	$\begin{array}{c} 0.00669^{+0.002}_{-0.0022} \\ 0.00054^{+0.00031}_{-0.00031} \end{array}$	$0.00806_{-0.0018}^{+0.0018} \\ 0.00074_{-0.00031}^{+0.00031}$	3525	$\begin{array}{c} 0.00152^{+0.0005}_{-0.00052} \\ 0.00017^{+0.00012}_{-0.00013} \end{array}$	$0.00183_{-0.00045}^{+0.00045} \\ 0.00025_{-0.00012}^{+0.00012}$	3833
$\Sigma_{i \neq j}$ -deformation				$pow_+$ -deformation		
Statistic	$\epsilon_{95\% ext{CL}}$	$\epsilon_{99\%\mathrm{CL}}$	t (s)	$\epsilon_{95\%\mathrm{CL}}$	$\epsilon_{99\%\mathrm{CL}}$	t (s)
$t_{ m SW}$	$\begin{array}{c} 0.04196^{+0.01}_{-0.013} \\ 1.0022^{+0.00012}_{-0.00086} \end{array}$	$0.05788^{+0.0086}_{-0.0098} \\ 1.00256^{+0.00025}_{-0.0003}$	1424	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{c} 0.01867^{+0.0035}_{-0.0038} \\ 0.00301^{+0.00069}_{-0.00066} \end{array}$	1457
$t_{\overline{ ext{KS}}}$	$1.0022^{+0.00012}_{-0.00086}$	$1.00256^{+0.00025}_{-0.0003}$	1435	$0.00225^{+0.00067}_{-0.00076}$	$0.00301_{-0.00066}^{+0.00069}$	1387
$t_{ m SKS}$	$0.04004^{+0.012}$	$0.05432^{+0.001}_{-0.013}$ $0.02285^{+0.0041}_{-0.0037}$	1654	$0.00744^{+0.0016}_{-0.0021}$	$0.01008^{+0.0014}_{-0.0015}$	1731
$t_{ m FGD}$	$0.01634^{+0.0042}_{-0.005}$	$0.02285_{-0.0037}^{+0.0041}$	1797	$0.01441^{+0.004}$	$0.01943^{+0.0036}_{-0.0033}$	1379
$t_{ m MMD}$	$\begin{array}{c} -0.033\\ 0.03119^{+0.015}_{-0.014}\\ 0.0024^{+0.00094}_{-0.0009} \end{array}$	$0.04401^{+0.013}_{-0.012}$	2310	$0.00603^{+0.0027}_{-0.0021}$	$0.00804^{+0.0025}$	2103
$t_{ m NPLM}$	$0.0024^{+0.00094}_{-0.0009}$	$0.00294^{+0.0009}_{-0.00077}$	13000	$0.00099^{+0.00033}_{-0.00033}$	$\begin{array}{c} -0.002\\ 0.00121^{+0.00029}_{-0.0003}\\ 0.00039^{+0.00017}_{-0.00016} \end{array}$	10454
$t_{\rm LLR}$	-	-	-	$\begin{array}{c} 0.00111_{-0.0041}^{-0.0021} \\ 0.00603_{-0.0021}^{+0.0023} \\ 0.00099_{-0.00033}^{+0.00033} \\ 0.00029_{-0.00016}^{+0.00016} \end{array}$	$0.00039^{+0.00017}_{-0.00016}$	3512
$pow\deformation$				$\mathcal{N} ext{-deformation}$		
Statistic	$\epsilon_{95\%\mathrm{CL}}$	$\epsilon_{99\%\mathrm{CL}}$	t (s)	$\epsilon_{95\%\mathrm{CL}}$	$\epsilon_{99\%\mathrm{CL}}$	t (s)
$t_{ m SW}$	$0.01322^{+0.0042}_{-0.0048}$	$0.01865^{+0.0038}_{-0.0041} \ 0.003^{+0.00065}_{-0.0007}$	1443	$0.21144^{+0.028}_{-0.04}$	$0.25259^{+0.02}_{-0.027}$	1202
$t_{\overline{ ext{KS}}}$	$0.00223^{+0.00071}_{-0.00076}$	$0.003^{+0.00065}_{-0.0007}$	1404	$0.00728^{+0.0012}_{-0.0015}$	$0.00877^{+0.0012}_{-0.0013}$	1332
$t_{ m SKS}$	$0.00721^{+0.002}_{-0.0024}$	$0.00984^{+0.0017}_{-0.0010}$	1755	$0.14872^{+0.025}_{-0.032}$	$0.17799^{+0.019}_{-0.023}$	1488
$t_{ m FGD}$	$0.01351^{+0.0046}_{-0.0051}$	$0.01876^{+0.0042}_{-0.0041}$	1404	$0.24435^{+0.028}_{-0.04}$	$0.2852^{+0.02}_{-0.024}$	1103
$t_{ m MMD}$	$0.01351^{+0.0046}_{-0.0051} \\ 0.00523^{+0.0029}_{-0.0024}$	$0.01876^{+0.0042}_{-0.0041} \\ 0.00739^{+0.0027}_{-0.0023}$	3255	$\begin{array}{c} -0.024435^{+0.028}_{-0.044} \\ 0.3198^{+0.042}_{-0.053} \end{array}$	$0.2852_{-0.024}^{+0.02} 0.37039_{-0.037}^{+0.037}$	1712
$t_{ m NPLM}$	$\begin{array}{c} -0.00135 \\ 0.00102^{+0.00035}_{-0.00035} \\ 0.00026^{+0.00016}_{-0.00017} \end{array}$	$0.00123^{+0.00031}_{-0.00031} \\ 0.00039^{+0.00016}_{-0.00016}$	10343	$0.09097^{+0.015}_{-0.018}$	$0.1014^{+0.011}_{-0.014}$	7797
$t_{\rm LLR}$	$0.00026^{+0.00016}_{-0.00017}$	$0.00039^{+0.00016}_{-0.00016}$	3594	-	-	
$\mathcal{U} ext{-} ext{deformation}$				Timing		
Statistic	$\epsilon_{95\%{ m CL}}$	$\epsilon_{99\%\mathrm{CL}}$	t (s)	$t^{\text{null}}$ (s)		
$t_{ m SW}$	$0.3659^{+0.046}_{-0.07}$	$0.43228^{+0.037}_{-0.044}$	1169	289		
$t_{\overline{ ext{KS}}}$	$0.01199^{+0.002}_{-0.0022}$	$0.0143^{+0.0019}_{-0.0019}$	1313	42		
$t_{ m SKS}$	$0.2538^{+0.042}_{-0.054}$	$0.30376^{+0.032}_{-0.04}$	1434	392		
$t_{ m FGD}$	$0.4208^{+0.05}_{-0.07}$	$0.49461^{+0.036}_{-0.043}$	1053	637		
$t_{ m MMD}$	$\begin{array}{c} 0.3659^{+0.046}_{-0.07} \\ 0.01199^{+0.002}_{-0.0022} \\ 0.2538^{+0.042}_{-0.054} \\ 0.4208^{+0.05}_{-0.07} \\ 0.55193^{+0.079}_{-0.085} \\ 0.15644^{+0.027} \end{array}$	$0.45225_{-0.044}$ $0.0143_{-0.0019}^{+0.0019}$ $0.30376_{-0.04}^{+0.032}$ $0.49461_{-0.043}^{+0.036}$ $0.64396_{-0.064}^{+0.059}$	1542	1276		
$t_{ m NPLM}$	$0.15644^{+0.027}_{-0.031}$	$0.17438^{+0.019}_{-0.025}$	7672	11856		
$t_{ m LLR}$	-	-	-	-		