${\bf MoG \ model \ with \ d=100, \ q=10, \ and \ n=m=10^4}$						
	μ -deformation			Σ_{ii} -deformation		
Statistic	$\epsilon_{95\%\mathrm{CL}}$	$\epsilon_{99\%\mathrm{CL}}$	t (s)	$\epsilon_{95\%\mathrm{CL}}$	$\epsilon_{99\%\mathrm{CL}}$	t (s)
$t_{ m SW}$	$0.09504_{-0.028}^{+0.024}$	$0.12338^{+0.023}_{-0.024}$	648	$0.03044^{+0.0066}_{-0.0084}$	$0.03963^{+0.0061}_{-0.0067}$	711
$t_{\overline{ ext{KS}}}$	$\begin{array}{c} \textbf{0.03604} \underline{-0.028} \\ \textbf{0.00787} \underline{-0.0031} \\ \textbf{0.07672} \underline{-0.021} \\ \textbf{0.13134} \underline{-0.034} \\ \textbf{0.0363} \end{array}$	$\begin{array}{c} 0.1233_{-0.024} \\ 0.01207_{-0.0032}^{+0.0034} \\ 0.10153_{-0.018}^{+0.016} \\ 0.16599_{-0.028}^{+0.028} \end{array}$	1244	$0.00217^{+0.0011}$	$\begin{array}{c} 0.00375 \begin{array}{c} +0.0011 \\ -0.0012 \\ 0.0345 \begin{array}{c} +0.0036 \\ -0.004 \\ 0.0367 \end{array} \end{array}$	1389
$t_{ m SKS}$	$0.07672^{+0.018}_{-0.021}$	$0.10153^{+0.016}_{-0.018}$	688	$ \begin{array}{c c} 0.02687^{+0.00099}_{-0.0056} \\ 0.04142^{+0.0081}_{-0.01} \end{array} $	$0.0345^{+0.0036}_{-0.004}$	736
$t_{ m FGD}$	$0.13134^{+0.032}_{-0.034}$	$0.16599^{+0.028}_{-0.028}$	2715	$0.04142^{+0.0081}_{-0.01}$	0.05020 ± 0.0007	2955
$t_{ m MMD}$	$0.10962^{+0.028}_{-0.025}$	$0.14183^{+0.023}_{-0.026}$	1350	$0.02117^{+0.007}_{-0.0078}$	$\begin{array}{c} 0.05232_{-0.0074} \\ 0.02757_{-0.0064}^{+0.0062} \end{array}$	1536
$t_{ m LLR}$	$9e - 05^{+6e - 05}_{-6e - 05}$	$0.00012^{+6e-05}_{-6e-05}$	3225	$2e - 05^{+1}_{-1}e^{-05}_{-05}$	$2e - 05^{+2e - 05}_{-1e - 05}$	3499
$\Sigma_{i \neq j}$ -deformation			pow_+ -deformation			
Statistic	$\epsilon_{95\%{ m CL}}$	$\epsilon_{99\%\mathrm{CL}}$	t (s)	$\epsilon_{95\%{ m CL}}$	$\epsilon_{99\%\mathrm{CL}}^{\mathrm{pow}_{+}}$	t (s)
$t_{ m SW}$	$0.00635^{+0.0011}_{-0.0015}$	$0.00825^{+0.00096}_{-0.0011}$	771	$0.01206^{+0.0028}_{-0.0033}$	$0.01579_{-0.0028}^{+0.0023}$	730
$t_{\overline{ ext{KS}}}$	$0.00078^{+0.00027}_{-0.00031}$	$0.00117^{+0.00028}_{-0.00020}$	1428	$0.00084^{+0.00043}_{-0.00041}$	$0.00144_{-0.00045}^{+0.00041}$ $0.0139_{-0.0015}^{+0.0013}$	1467
$t_{ m SKS}$	-0.00444 ± 0.0011	$0.00592^{+0.00098}_{-0.001}$	821	$0.01088^{+0.0016}_{-0.0021}$	$0.0139^{+0.0013}_{-0.0015}$	773
$t_{ m FGD}$	$ \begin{array}{c} 0.00444_{-0.0013} \\ 0.00505_{-0.0012}^{+0.00098} \end{array} $	$0.00592^{+0.00098}_{-0.001}$ $0.00646^{+0.00087}_{-0.00098}$	3326	$0.01638^{+0.0032}_{-0.0039}$	$0.02069^{+0.0027}_{-0.003}$	2488
$t_{ m MMD}$	$0.00903^{+0.0022}_{-0.0026}$	$0.01168^{+0.0019}_{-0.002}$	1525	$0.00761^{+0.0026}$	$0.00988^{+0.0023}_{-0.0023}$	1238
$t_{ m LLR}$	0.0^{+0}_{-0}	0.0_{-0}^{+0}	4354	$1e - 05^{+0}_{-1e-05}$	$1e - 05_{-1e - 05}^{-0.0023}$	3842
$pow\deformation$			$\mathcal{N} ext{-} ext{deformation}$			
Statistic	$\epsilon_{95\%\mathrm{CL}}$	$\epsilon_{99\%\mathrm{CL}}^{\mathrm{pow}_{-}}$	t (s)	$\epsilon_{95\%\mathrm{CL}}$	$\epsilon_{99\%\mathrm{CL}}^{\mathcal{N}}$	t (s)
$t_{ m SW}$	$0.01253^{+5}_{-0.0032}$	$0.0164^{+5}_{-0.0026}$	653	$0.32495^{+0.033}_{-0.046}$	$\begin{array}{c} 0.37663^{+0.025}_{-0.032} \\ \textbf{0.03668}^{+0.0078}_{-0.008} \end{array}$	617
$t_{\overline{ ext{KS}}}$	$0.00086^{+0.00044}_{-0.00042}$	$0.00147^{+0.00042}_{-0.00047}$ $0.01376^{+0.0013}_{-0.0015}$	1542	\perp 0.00 \pm 0.0081	$0.03668^{+0.0078}_{-0.008}$	652
$t_{ m SKS}$	$0.01077^{+0.0016}_{-0.0021}$	$0.01376^{+0.0013}_{-0.0015}$	786	$\begin{array}{c} \textbf{0.02563}_{-0.0097} \\ 0.27956_{-0.043}^{+0.034} \end{array}$	$0.32856^{+0.027}_{-0.033}$	657
$t_{ m FGD}$	$0.01685^{+0.0032}_{-0.0038}$	$0.02139_{-0.0032}^{+0.0026} \\ 0.01083_{-0.0021}^{+0.002}$	3221	$\pm 0.00000\pm 0.027$	$0.32529^{+0.021}_{-0.025}$	2636
$t_{ m MMD}$	$\begin{array}{c} 0.01077^{+0.0016}_{-0.0021} \\ 0.01685^{+0.0032}_{-0.0038} \\ 0.00834^{+0.0023}_{-0.0025} \end{array}$	$0.01083^{+0.002}_{-0.0021}$	1257	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$1.33971_{-0.12}^{+0.09}$	731
$t_{ m LLR}$	$1e - 05^{+0}_{-1e-05}$	$1e - 05^{+0}_{-1e-05}$	4903	-	-	-
$\mathcal{U} ext{-} ext{deformation}$			Timing			
Statistic	$\epsilon_{95\% ext{CL}}$	$\epsilon_{99\%\mathrm{CL}}^{\mathcal{U}}$	t (s)	t^{null} (s)		
$t_{ m SW}$	$0.56347^{+0.054}_{-0.083}$	$0.65308^{+0.044}_{-0.056}$	588	285		
$t_{\overline{ ext{KS}}}$	$0.03885^{+0.012}_{-0.015}$	$0.0555^{+0.011}_{-0.012}$	644	511		
$t_{ m SKS}$	$0.48383^{+0.061}_{-0.074}$	$0.56865^{+0.048}_{-0.057}$	631	456		
$t_{ m FGD}$	$0.49924^{+0.046}_{-0.066}$	$0.56381^{+0.036}_{-0.047}$	2515	3225		
$t_{ m MMD}$	$2.02548^{+0.23}_{-0.32}$	$2.31727_{-0.2}^{+0.16}$	1113	665		
$t_{ m LLR}$	-	-	_	-		