

**MoG model with  $d = 5$ ,  $q = 3$ , and  $n = m = 10^4$**

$\mu$ -deformation				$\Sigma_{ii}$ -deformation		
Statistic	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)
$t_{SW}$	$0.09192^{+0.035}_{-0.035}$	$0.12363^{+0.035}_{-0.032}$	1353	$0.03015^{+0.0085}_{-0.0099}$	$0.04164^{+0.0081}_{-0.0086}$	1531
$t_{\overline{KS}}$	<b><math>0.00496^{+0.0017}_{-0.0017}</math></b>	<b><math>0.00664^{+0.0015}_{-0.0017}</math></b>	1539	<b><math>0.00274^{+0.00063}_{-0.00069}</math></b>	<b><math>0.00353^{+0.00059}_{-0.00064}</math></b>	1626
$t_{SKS}$	$0.05494^{+0.019}_{-0.019}$	$0.07242^{+0.018}_{-0.018}$	1748	$0.01644^{+0.0038}_{-0.0045}$	$0.02223^{+0.0033}_{-0.0038}$	1888
$t_{FGD}$	$0.10354^{+0.06}_{-0.044}$	$0.14117^{+0.056}_{-0.042}$	<b>1278</b>	$0.0327^{+0.0089}_{-0.01}$	$0.0444^{+0.0077}_{-0.0077}$	<b>1270</b>
$t_{MMD}$	$0.06434^{+0.035}_{-0.025}$	$0.08544^{+0.033}_{-0.025}$	1344	$0.01392^{+0.0054}_{-0.0046}$	$0.0188^{+0.005}_{-0.0044}$	1497
$t_{LLR}$	$0.00078^{+0.00047}_{-0.00047}$	$0.0011^{+0.00047}_{-0.00047}$	2810	$0.00027^{+0.00016}_{-0.00016}$	$0.00037^{+0.00017}_{-0.00016}$	3000
$\Sigma_{i \neq j}$ -deformation				pow <sub>+</sub> -deformation		
Statistic	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)
$t_{SW}$	$0.02827^{+0.006}_{-0.0083}$	$0.03864^{+0.0056}_{-0.0063}$	1766	$0.01845^{+0.0052}_{-0.0061}$	$0.0255^{+0.0047}_{-0.0053}$	<b>1259</b>
$t_{\overline{KS}}$	$1.00317^{+0}_{-0.0013}$	$1.00354^{+0.00012}_{-0.00043}$	<b>1651</b>	<b><math>0.00345^{+0.00099}_{-0.0011}</math></b>	<b><math>0.00444^{+0.00096}_{-0.00097}</math></b>	1612
$t_{SKS}$	$0.02595^{+0.0071}_{-0.0081}$	$0.0347^{+0.0062}_{-0.0073}$	1941	$0.0106^{+0.0024}_{-0.0027}$	$0.01405^{+0.0021}_{-0.0023}$	1807
$t_{FGD}$	<b><math>0.01229^{+0.0032}_{-0.0034}</math></b>	<b><math>0.01728^{+0.0027}_{-0.0028}</math></b>	2040	$0.01964^{+0.0054}_{-0.006}$	$0.02668^{+0.0046}_{-0.0048}$	1294
$t_{MMD}$	$0.02322^{+0.0085}_{-0.008}$	$0.03162^{+0.0081}_{-0.0076}$	2024	$0.00788^{+0.0032}_{-0.0027}$	$0.01064^{+0.003}_{-0.0024}$	1518
$t_{LLR}$	$0.04301^{+0.016}_{-0.02}$	$0.0542^{+0.015}_{-0.015}$	4164	$0.00041^{+0.00025}_{-0.00025}$	$0.00057^{+0.00025}_{-0.00025}$	3017
pow <sub>-</sub> -deformation				$\mathcal{N}$ -deformation		
Statistic	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)
$t_{SW}$	$0.01989^{+0.0056}_{-0.0064}$	$0.0273^{+0.0052}_{-0.0055}$	<b>1221</b>	$0.25306^{+0.031}_{-0.043}$	$0.29897^{+0.026}_{-0.029}$	<b>1050</b>
$t_{\overline{KS}}$	<b><math>0.00317^{+0.0009}_{-0.00089}</math></b>	<b><math>0.00416^{+0.0009}_{-0.00083}</math></b>	1634	<b><math>0.00921^{+0.0016}_{-0.0017}</math></b>	<b><math>0.01112^{+0.0016}_{-0.0016}</math></b>	1496
$t_{SKS}$	$0.01066^{+0.0023}_{-0.0027}$	$0.01407^{+0.0021}_{-0.0022}$	1804	$0.18137^{+0.025}_{-0.036}$	$0.21312^{+0.023}_{-0.025}$	1551
$t_{FGD}$	$0.02088^{+0.0059}_{-0.0061}$	$0.02847^{+0.005}_{-0.005}$	1300	$0.29378^{+0.029}_{-0.045}$	$0.34516^{+0.022}_{-0.026}$	1080
$t_{MMD}$	$0.00858^{+0.0037}_{-0.0032}$	$0.01169^{+0.0034}_{-0.003}$	1550	$0.37502^{+0.046}_{-0.064}$	$0.43162^{+0.041}_{-0.039}$	1240
$t_{LLR}$	$0.00036^{+0.00025}_{-0.00025}$	$0.00053^{+0.00025}_{-0.00025}$	3139	-	-	-
$\mathcal{U}$ -deformation				Timing		
Statistic	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)	$t^{\text{null}}$ (s)		
$t_{SW}$	$0.4365^{+0.054}_{-0.078}$	$0.51675^{+0.039}_{-0.053}$	<b>988</b>	261		
$t_{\overline{KS}}$	<b><math>0.01504^{+0.0026}_{-0.0027}</math></b>	<b><math>0.01804^{+0.0022}_{-0.0026}</math></b>	1510	<b>37</b>		
$t_{SKS}$	$0.30846^{+0.044}_{-0.057}$	$0.36537^{+0.036}_{-0.045}$	1513	352		
$t_{FGD}$	$0.50798^{+0.053}_{-0.076}$	$0.59684^{+0.038}_{-0.049}$	1030	368		
$t_{MMD}$	$0.64544^{+0.087}_{-0.099}$	$0.7501^{+0.064}_{-0.067}$	1231	215		
$t_{LLR}$	-	-	-	-		