

**CG model with  $d = 100$  and  $n = m = 5 \cdot 10^4$**

Statistic	$\mu$ -deformation			$\Sigma_{ii}$ -deformation		
	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)
$t_{SW}$	$0.03802^{+0.011}_{-0.013}$	$0.0489^{+0.0099}_{-0.011}$	857	$0.01458^{+0.0043}_{-0.0051}$	$0.01856^{+0.0039}_{-0.004}$	<b>822</b>
$t_{\overline{KS}}$	$0.03575^{+0.012}_{-0.015}$	$0.04605^{+0.011}_{-0.012}$	<b>833</b>	$0.01795^{+0.0061}_{-0.0076}$	$0.02313^{+0.0057}_{-0.0062}$	883
$t_{SKS}$	$0.03957^{+0.011}_{-0.014}$	$0.05019^{+0.01}_{-0.011}$	1038	$0.01894^{+0.0059}_{-0.0072}$	$0.02379^{+0.0053}_{-0.0061}$	1141
$t_{FGD}$	$0.04169^{+0.014}_{-0.016}$	$0.05238^{+0.012}_{-0.013}$	11537	<b><math>0.01306^{+0.0042}_{-0.005}</math></b>	<b><math>0.01641^{+0.0039}_{-0.0039}</math></b>	10029
$t_{MMD}$	<b><math>0.02696^{+0.015}_{-0.013}</math></b>	<b><math>0.0351^{+0.014}_{-0.011}</math></b>	8530	$0.01695^{+0.0078}_{-0.0074}$	$0.02212^{+0.0073}_{-0.0062}$	8705
$t_{LLR}$	$0.00244^{+0.0015}_{-0.0015}$	$0.00345^{+0.0015}_{-0.0015}$	8119	$0.0005^{+0.00035}_{-0.00035}$	$0.0007^{+0.00035}_{-0.00035}$	9217
Statistic	$\Sigma_{i \neq j}$ -deformation			pow <sub>+</sub> -deformation		
	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)
$t_{SW}$	$0.01669^{+0.005}_{-0.0063}$	$0.02178^{+0.0044}_{-0.0051}$	<b>16981</b>	$0.00319^{+0.00091}_{-0.0011}$	$0.00408^{+0.0008}_{-0.00089}$	<b>875</b>
$t_{\overline{KS}}$	$1.01758^{+0.0098}_{-0.0081}$	$1.02142^{+0.0078}_{-0.003}$	18110	$0.00377^{+0.0011}_{-0.0015}$	$0.0048^{+0.001}_{-0.0011}$	938
$t_{SKS}$	$0.02138^{+0.0073}_{-0.0089}$	$0.02764^{+0.0065}_{-0.0074}$	17381	$0.00365^{+0.00095}_{-0.0012}$	$0.00455^{+0.00087}_{-0.00099}$	1271
$t_{FGD}$	<b><math>0.0017^{+0.0004}_{-0.0006}</math></b>	<b><math>0.0021^{+0.0004}_{-0.00049}</math></b>	34786	$0.00319^{+0.001}_{-0.0012}$	$0.00401^{+0.0009}_{-0.00095}$	8636
$t_{MMD}$	$0.0097^{+0.0046}_{-0.0044}$	$0.01275^{+0.0043}_{-0.0037}$	22011	<b><math>0.00213^{+0.0012}_{-0.001}</math></b>	<b><math>0.00278^{+0.0011}_{-0.00089}</math></b>	9610
$t_{LLR}$	$0.00823^{+0.0025}_{-0.0036}$	$0.01018^{+0.0028}_{-0.0028}$	24451	$0.00014^{+0.0001}_{-0.0001}$	$0.0002^{+0.0001}_{-0.0001}$	9983
Statistic	pow <sub>-</sub> -deformation			$\mathcal{N}$ -deformation		
	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)
$t_{SW}$	$0.00326^{+5}_{-0.0014}$	$0.00416^{+5}_{-0.0011}$	<b>809</b>	$0.33188^{+0.045}_{-0.065}$	$0.37703^{+0.037}_{-0.044}$	<b>702</b>
$t_{\overline{KS}}$	$0.00375^{+0.0013}_{-0.0017}$	$0.00477^{+0.0012}_{-0.0013}$	944	$0.36811^{+0.063}_{-0.087}$	$0.42005^{+0.049}_{-0.06}$	762
$t_{SKS}$	$0.0036^{+0.0011}_{-0.0014}$	$0.00449^{+0.001}_{-0.0012}$	1262	$0.36186^{+0.052}_{-0.076}$	$0.40547^{+0.046}_{-0.057}$	1001
$t_{FGD}$	$0.00325^{+0.0014}_{-0.0016}$	$0.00409^{+0.0012}_{-0.0012}$	12398	<b><math>0.15873^{+0.02}_{-0.036}</math></b>	<b><math>0.17714^{+0.017}_{-0.022}</math></b>	7779
$t_{MMD}$	<b><math>0.00207^{+0.0012}_{-0.0011}</math></b>	<b><math>0.00273^{+0.0012}_{-0.00095}</math></b>	9933	$0.79853^{+0.11}_{-0.16}$	$0.91959^{+0.078}_{-0.098}$	6228
$t_{LLR}$	$0.00018^{+0.0001}_{-0.0001}$	$0.00023^{+0.00011}_{-0.0001}$	9090	-	-	-
Statistic	$\mathcal{U}$ -deformation			Timing		
	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)	$t^{\text{null}}$ (s)		
$t_{SW}$	$0.57515^{+0.082}_{-0.11}$	$0.6534^{+0.065}_{-0.077}$	<b>662</b>	<b>337</b>		
$t_{\overline{KS}}$	$0.64154^{+0.1}_{-0.15}$	$0.73314^{+0.076}_{-0.11}$	744	789		
$t_{SKS}$	$0.62476^{+0.091}_{-0.13}$	$0.7049^{+0.075}_{-0.097}$	935	1044		
$t_{FGD}$	<b><math>0.27255^{+0.039}_{-0.059}</math></b>	<b><math>0.30784^{+0.029}_{-0.038}</math></b>	7276	16484		
$t_{MMD}$	$1.39355^{+0.19}_{-0.28}$	$1.59398^{+0.15}_{-0.18}$	7134	14531		
$t_{LLR}$	-	-	-	-		