

$\mathbf{n} = \mathbf{m} = 10^4$						
Statistic	$\mu$ -deformation			$\Sigma_{ii}$ -deformation		
	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)
$t_{LLR}$	$0.00164^{+0.0012}_{-0.0012}$	$0.00237^{+0.0012}_{-0.0012}$	15369	$0.00031^{+0.00021}_{-0.00022}$	$0.00045^{+0.00022}_{-0.00022}$	16288
$d_{MMD^2_u}$	$0.0207^{+0.0092}_{-0.0077}$	$0.02578^{+0.0087}_{-0.0071}$	13097	$0.01289^{+0.005}_{-0.0045}$	$0.01617^{+0.0047}_{-0.004}$	11382
$\overline{D}$	$0.02531^{+0.0078}_{-0.0089}$	$0.03236^{+0.0073}_{-0.0079}$	1178	$0.0127^{+0.0042}_{-0.0049}$	$0.01612^{+0.004}_{-0.0042}$	1266
$\widetilde{W}$	$0.02667^{+0.0083}_{-0.0098}$	$0.03433^{+0.0074}_{-0.008}$	724	$0.01065^{+0.0031}_{-0.0038}$	$0.01351^{+0.0028}_{-0.003}$	752
$\widetilde{D}$	$0.02742^{+0.0084}_{-0.01}$	$0.03493^{+0.0077}_{-0.0086}$	1217	$0.01323^{+0.0042}_{-0.0052}$	$0.01674^{+0.0038}_{-0.0043}$	1310
$d_{FGD_\infty}$	$0.0292^{+0.01}_{-0.011}$	$0.03631^{+0.0089}_{-0.0088}$	18260	$0.0095^{+0.0028}_{-0.0031}$	$0.01169^{+0.0026}_{-0.0026}$	18549
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)
$t_{LLR}$	$1e-05^{+1e-05}_{-1e-05}$	$2e-05^{+0}_{-1e-05}$	23567	$0.0001^{+7e-05}_{-7e-05}$	$0.00015^{+7e-05}_{-7e-05}$	21799
$d_{FGD_\infty}$	$0.00106^{+0.00027}_{-0.00035}$	$0.00132^{+0.00023}_{-0.00027}$	20590	$0.00232^{+0.00071}_{-0.0008}$	$0.00286^{+0.00064}_{-0.00066}$	19918
$d_{MMD^2_u}$	$0.00667^{+0.0029}_{-0.0027}$	$0.00858^{+0.0027}_{-0.0024}$	11713	$0.00163^{+0.00076}_{-0.0006}$	$0.00205^{+0.00071}_{-0.00058}$	12498
$\widetilde{W}$	$0.01128^{+0.0033}_{-0.0043}$	$0.01494^{+0.0029}_{-0.0034}$	747	$0.00229^{+0.00068}_{-0.00082}$	$0.00293^{+0.00062}_{-0.00067}$	796
$\widetilde{D}$	$0.01278^{+0.0047}_{-0.0058}$	$0.01672^{+0.0043}_{-0.0048}$	1302	$0.00254^{+0.00073}_{-0.00093}$	$0.00319^{+0.00067}_{-0.00074}$	1403
$\overline{D}$	$1.00632^{+0.00076}_{-0.00025}$	$1.00829^{+0.00074}_{-0.00098}$	852	$0.0027^{+0.0008}_{-0.00094}$	$0.0034^{+0.00073}_{-0.0008}$	1350
Statistic	pow <sub>-</sub> -deformation			$\mathcal{N}$ -deformation		
	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)
$t_{LLR}$	$0.00012^{+7e-05}_{-7e-05}$	$0.00017^{+7e-05}_{-7e-05}$	17335	NaN	NaN	NaN
$d_{MMD^2_u}$	$0.00143^{+0.00077}_{-0.00064}$	$0.00185^{+0.00073}_{-0.0006}$	12505	$0.68952^{+0.078}_{-0.098}$	$0.77914^{+0.057}_{-0.067}$	8e+03
$d_{FGD_\infty}$	$0.00225^{+0.00076}_{-0.00086}$	$0.00278^{+0.00071}_{-0.0007}$	20137	$0.13244^{+0.016}_{-0.023}$	$0.1479^{+0.011}_{-0.016}$	1.5e+04
$\widetilde{W}$	$0.00229^{+5}_{-0.00096}$	$0.00293^{+5}_{-0.00079}$	716	$0.28179^{+0.039}_{-0.054}$	$0.32012^{+0.032}_{-0.037}$	6.2e+02
$\widetilde{D}$	$0.00253^{+0.00087}_{-0.0011}$	$0.00316^{+0.0008}_{-0.00092}$	1403	$0.30315^{+0.045}_{-0.07}$	$0.34204^{+0.037}_{-0.05}$	1.1e+03
$\overline{D}$	$0.0027^{+0.00084}_{-0.001}$	$0.0034^{+0.00073}_{-0.00085}$	1372	$0.3116^{+0.049}_{-0.067}$	$0.35101^{+0.042}_{-0.049}$	1.1e+03
Statistic	$\mathcal{U}$ -deformation			Timing		
	$\epsilon_{95\%CL}$	$\epsilon_{99\%CL}$	$t$ (s)	$t^{\text{null}}$ (s)		
$d_{FGD_\infty}$	$0.22963^{+0.025}_{-0.04}$	$0.25498^{+0.021}_{-0.028}$	1.5e+04	51866		
$\overline{D}$	$0.54132^{+0.081}_{-0.12}$	$0.60655^{+0.069}_{-0.083}$	1e+03	1499		
$d_{MMD^2_u}$	$1.19904^{+0.13}_{-0.18}$	$1.34688^{+0.11}_{-0.12}$	8.8e+03	18801		
$\widetilde{D}$	$0.52074^{+0.082}_{-0.12}$	$0.59085^{+0.066}_{-0.087}$	1e+03	1603		
$\widetilde{W}$	$0.4924^{+0.067}_{-0.098}$	$0.55614^{+0.053}_{-0.064}$	5.9e+02	394		
$t_{LLR}$	NaN	NaN	NaN	-		