

| Scaled Particle features with $n = m = 5 \cdot 10^4$ |  |   |             |   |   |              |
|--|--|---|-------------|---|---|--------------|
| Statistic  | $\mu$ -deformation                               |   |             | $\Sigma_{ii}$ -deformation                      |   |              |
|  | $\epsilon_{95\%CL}$                              | $\epsilon_{99\%CL}$                               | $t$ (s)     | $\epsilon_{95\%CL}$                             | $\epsilon_{99\%CL}$                             | $t$ (s)      |
| $t_{SW}$   | $0.01334^{+0.0038}_{-0.0046}$                    | $0.01815^{+0.0037}_{-0.0029}$                     | <b>1116</b> | $0.0166^{+0.0059}_{-0.0063}$                    | $0.02125^{+0.006}_{-0.0034}$                    | <b>1079</b>  |
| $t_{\overline{KS}}$                                  | <b><math>0.0^{+0.0045}_{-0}</math></b>           | <b><math>0.00771^{+0.0022}_{-0.0049}</math></b>   | 58835       | <b><math>0.0^{+0.013}_{-0}</math></b>           | $0.01904^{+0.0086}_{-0.011}$                    | 62555        |
| $t_{SKS}$  | $0.01275^{+0.0034}_{-0.0043}$                    | $0.01734^{+0.0036}_{-0.0028}$                     | 18356       | $0.02131^{+0.007}_{-0.0073}$                    | $0.02899^{+0.006}_{-0.0047}$                    | 26542        |
| $t_{FGD}$  | $0.01627^{+0.003}_{-0.006}$                      | $0.02025^{+0.0024}_{-0.0047}$                     | 39057       | $0.01469^{+0.0034}_{-0.0057}$                   | <b><math>0.01805^{+0.0043}_{-0.0051}</math></b> | 27175        |
| $t_{MMD}$  | $0.01613^{+0.0049}_{-0.0058}$                    | $0.02141^{+0.0032}_{-0.0035}$                     | 22841       | $0.01606^{+0.0074}_{-0.0066}$                   | $0.02089^{+0.0055}_{-0.0061}$                   | 33730        |
| $t_{NPLM}$   | $0.00152^{+0.00041}_{-0.00068}$                  | $0.00167^{+0.00045}_{-0.00046}$                   | 64992       | $0.00426^{+0.0014}_{-0.0017}$                   | $0.00471^{+0.00092}_{-0.0011}$                  | 27852        |
| $t_{NPLM}$   | $0.00147^{+0.00046}_{-0.00056}$                  | $0.00182^{+0.00033}_{-0.00038}$                   | 45154       | $0.00762^{+0.0025}_{-0.0025}$                   | $0.00939^{+0.0022}_{-0.002}$                    | 38293        |
| 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)      |
| $t_{SW}$   | $0.03128^{+0.0068}_{-0.011}$                     | $0.04152^{+0.0061}_{-0.0067}$                     | <b>1424</b> | $0.01894^{+0.0055}_{-0.0072}$                   | $0.02425^{+0.0068}_{-0.0039}$                   | <b>1006</b>  |
| $t_{\overline{KS}}$                                  | $0.99134^{+0.016}_{-0.0078}$                     | $1.01532^{+0.008}_{-0.004}$                       | 11987       | <b><math>0.0^{+0.0066}_{-0}</math></b>          | <b><math>0.01141^{+0.0073}_{-0.011}</math></b>  | 49091        |
| $t_{SKS}$  | $0.03809^{+0.011}_{-0.013}$                      | $0.0515^{+0.011}_{-0.0083}$                       | 27313       | $0.03552^{+0.0055}_{-0.013}$                    | $0.04366^{+0.01}_{-0.0066}$                     | 15487        |
| $t_{FGD}$  | <b><math>0.0026^{+0.00076}_{-0.00089}</math></b> | <b><math>0.00345^{+0.00052}_{-0.00076}</math></b> | 33338       | $0.01534^{+0.0052}_{-0.0062}$                   | $0.01886^{+0.0045}_{-0.0055}$                   | 24241        |
| $t_{MMD}$  | $0.01919^{+0.011}_{-0.0079}$                     | $0.02614^{+0.0089}_{-0.0065}$                     | 20604       | $0.01896^{+0.0074}_{-0.008}$                    | $0.02428^{+0.0068}_{-0.0071}$                   | 27198        |
| $t_{NPLM}$   | $0.00906^{+0.0021}_{-0.0035}$                    | $0.01018^{+0.0019}_{-0.0023}$                     | 54091       | $0.01792^{+0.0064}_{-0.0086}$                   | $0.02055^{+0.0056}_{-0.0056}$                   | <b>37834</b> |
| $t_{NPLM}$   | $0.01213^{+0.0038}_{-0.0045}$                    | $0.01536^{+0.0024}_{-0.0033}$                     | 36876       | $0.01956^{+0.0048}_{-0.0088}$                   | $0.02471^{+0.005}_{-0.0069}$                    | 35571        |
| Statistic  | pow <sub>-</sub> -deformation                    |   |             | $\mathcal{N}$ -deformation                      |   |              |
|  | $\epsilon_{95\%CL}$                              | $\epsilon_{99\%CL}$                               | $t$ (s)     | $\epsilon_{95\%CL}$                             | $\epsilon_{99\%CL}$                             | $t$ (s)      |
| $t_{SW}$   | $0.01909^{+0.0073}_{-0.0077}$                    | $0.02693^{+0.0061}_{-0.0068}$                     | <b>1006</b> | $0.10868^{+0.02}_{-0.017}$                      | $0.1277^{+0.011}_{-0.022}$                      | <b>886</b>   |
| $t_{\overline{KS}}$                                  | <b><math>0.0^{+0.0095}_{-0}</math></b>           | <b><math>0.01323^{+0.0069}_{-0.0085}</math></b>   | 45323       | $0.0656^{+0.016}_{-0.049}$                      | $0.08707^{+0.013}_{-0.019}$                     | 22186        |
| $t_{SKS}$  | $0.0356^{+0.0093}_{-0.013}$                      | $0.04726^{+0.007}_{-0.011}$                       | 22261       | $0.10733^{+0.022}_{-0.017}$                     | $0.13357^{+0.016}_{-0.026}$                     | 24344        |
| $t_{FGD}$  | $0.01543^{+0.007}_{-0.0065}$                     | $0.01852^{+0.0068}_{-0.0042}$                     | 24968       | <b><math>0.04853^{+0.0071}_{-0.0075}</math></b> | <b><math>0.05702^{+0.0051}_{-0.006}</math></b>  | 24273        |
| $t_{MMD}$  | $0.01859^{+0.0085}_{-0.0081}$                    | $0.02501^{+0.0083}_{-0.0064}$                     | 27960       | $0.26953^{+0.035}_{-0.052}$                     | $0.30333^{+0.029}_{-0.011}$                     | 19782        |
| $t_{NPLM}$   | $0.03192^{+0.0075}_{-0.0064}$                    | $0.03387^{+0.0064}_{-0.007}$                      | 29245       | $0.08993^{+0.012}_{-0.016}$                     | $0.098^{+0.0071}_{-0.012}$                      | 27364        |
| $t_{NPLM}$   | $0.03218^{+0.0063}_{-0.0089}$                    | $0.03765^{+0.0051}_{-0.0066}$                     | 33567       | $0.09864^{+0.015}_{-0.023}$                     | $0.11287^{+0.0091}_{-0.015}$                    | 30105        |
| Statistic  | $\mathcal{U}$ -deformation                       |   |             | Timing  |   |              |
|  | $\epsilon_{95\%CL}$                              | $\epsilon_{99\%CL}$                               | $t$ (s)     | $t^{\text{null}}$ (s)                           |   |              |
| $t_{SW}$   | $0.19116^{+0.035}_{-0.03}$                       | $0.22462^{+0.02}_{-0.039}$                        | <b>774</b>  | <b>133</b>                                      |   |              |
| $t_{\overline{KS}}$                                  | $0.10693^{+0.022}_{-0.086}$                      | $0.14193^{+0.021}_{-0.019}$                       | 10646       | 1972  |   |              |
| $t_{SKS}$  | $0.19116^{+0.035}_{-0.03}$                       | $0.22462^{+0.02}_{-0.039}$                        | 16154       | 4379  |   |              |
| $t_{FGD}$  | <b><math>0.08969^{+0.006}_{-0.016}</math></b>    | <b><math>0.10215^{+0.0042}_{-0.016}</math></b>    | 21825       | 6689  |   |              |
| $t_{MMD}$  | $0.48398^{+0.032}_{-0.088}$                      | $0.5512^{+0.022}_{-0.058}$                        | 14676       | 3605  |   |              |
| $t_{NPLM}$   | $0.15699^{+0.019}_{-0.034}$                      | $0.1632^{+0.02}_{-0.02}$                          | 27308       | 4569  |   |              |
| $t_{NPLM}$   | $0.16951^{+0.027}_{-0.038}$                      | $0.19396^{+0.016}_{-0.027}$                       | 29804       | 7280  |   |              |