|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (DE is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| NNA | Friedman | 2.29810E-08 | 2.29810E-08 | 2.29810E-08 | 2.29810E-08 |
|  | Friedman Aligned | 8.47789E-11 | 1.56515E-10 | 1.55951E-10 | 1.56515E-10 |
|  | Quade | 3.76631E-01 | 1.0 | 1.0 | 6.58260E-01 |
| CWOA | Friedman | 1.05597E-07 | 1.94949E-07 | 1.94949E-07 | 1.94949E-07 |
|  | Friedman Aligned | 1.54745E-10 | 4.76139E-10 | 4.58363E-10 | 4.76139E-10 |
|  | Quade | 3.76631E-01 | 7.78425E-01 | 7.78425E-01 | 5.52832E-01 |
| PSO | Friedman | 2.13595E-07 | 5.42203E-07 | 5.42203E-07 | 5.42202E-07 |
|  | Friedman Aligned | 2.39185E-10 | 8.83146E-10 | 8.83146E-10 | 8.83146E-10 |
|  | Quade | 3.76631E-01 | 4.64129E-01 | 4.64129E-01 | 3.76631E-01 |
| ISCA | Friedman | 1.19223E-06 | 3.66839E-06 | 3.66839E-06 | 3.66838E-06 |
|  | Friedman Aligned | 1.54745E-10 | 4.76139E-10 | 4.58363E-10 | 4.76139E-10 |
|  | Quade | 4.25757E-01 | 1.0 | 1.0 | 8.18550E-01 |
| WW | Friedman | 6.91165E-06 | 2.39250E-05 | 2.39250E-05 | 2.39247E-05 |
|  | Friedman Aligned | 8.47789E-11 | 1.56515E-10 | 1.55951E-10 | 1.56515E-10 |
|  | Quade | 4.84274E-01 | 1.0 | 1.0 | 8.98952E-01 |
| GOTLBO | Friedman | 1.16713E-02 | 4.32304E-02 | 4.32304E-02 | 4.24216E-02 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 8.25712E-01 | 1.0 | 1.0 | 9.98420E-01 |
| MABC | Friedman | 1.64623E-01 | 6.46181E-01 | 6.46181E-01 | 4.92358E-01 |
|  | Friedman Aligned | 2.85170E-09 | 1.07487E-08 | 1.07487E-08 | 1.07487E-08 |
|  | Quade | 8.53843E-01 | 1.0 | 1.0 | 9.99289E-01 |
| EBLSHADE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| NDE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| TLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| STLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| IJAYA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

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| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (EBLSHADE is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| WW | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 1.30617E-03 | 4.52317E-03 | 4.52317E-03 | 4.51409E-03 |
| MABC | Friedman | 2.68452E-13 | 4.95604E-13 | 4.95604E-13 | 4.95604E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 1.18584E-02 | 4.48199E-02 | 4.48199E-02 | 4.39681E-02 |
| GOTLBO | Friedman | 1.68209E-10 | 4.26991E-10 | 4.26991E-10 | 4.26991E-10 |
|  | Friedman Aligned | 5.52549E-11 | 2.04018E-10 | 2.04018E-10 | 2.04018E-10 |
|  | Quade | 9.21013E-03 | 3.40914E-02 | 3.40914E-02 | 3.35872E-02 |
| DE | Friedman | 6.52150E-10 | 2.00661E-09 | 1.86258E-09 | 2.00661E-09 |
|  | Friedman Aligned | 1.86733E-09 | 6.46383E-09 | 6.46383E-09 | 6.46383E-09 |
|  | Quade | 3.78658E-02 | 1.40848E-01 | 1.40848E-01 | 1.32837E-01 |
| ISCA | Friedman | 6.52150E-10 | 2.00661E-09 | 1.86258E-09 | 2.00661E-09 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 7.54340E-04 | 2.32165E-03 | 2.32165E-03 | 2.31923E-03 |
| PSO | Friedman | 1.13825E-09 | 4.20278E-09 | 4.20278E-09 | 4.20278E-09 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 1.64554E-04 | 1.64567E-04 | 1.64567E-04 | 1.64554E-04 |
| CWOA | Friedman | 1.53596E-09 | 5.78937E-09 | 5.78937E-09 | 5.78937E-09 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 2.55177E-04 | 4.71146E-04 | 4.71146E-04 | 4.71045E-04 |
| NNA | Friedman | 3.01406E-09 | 1.11288E-08 | 1.11288E-08 | 1.11288E-08 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 3.45157E-04 | 8.76285E-04 | 8.76285E-04 | 8.75936E-04 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| IJAYA | Friedman | 4.00976E-06 | 1.38799E-05 | 1.38799E-05 | 1.38799E-05 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 1.52655E-01 | 5.41737E-01 | 5.41737E-01 | 4.36390E-01 |
| NDE | Friedman | 1.44050E-01 | 4.51073E-01 | 4.51073E-01 | 3.80347E-01 |
|  | Friedman Aligned | 4.74587E-01 | 1.0 | 1.0 | 8.61961E-01 |
|  | Quade | 6.69739E-01 | 1.0 | 1.0 | 9.66920E-01 |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| TLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| STLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

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| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (ADELI is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| MABC | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 5.85354E-04 | 2.20663E-03 | 2.20663E-03 | 2.20455E-03 |
| PSO | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 2.06564E-06 | 2.06565E-06 | 2.06565E-06 | 2.06564E-06 |
| ISCA | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 1.68471E-05 | 5.18374E-05 | 5.18374E-05 | 5.18362E-05 |
| NNA | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 6.17579E-06 | 1.56771E-05 | 1.56771E-05 | 1.56769E-05 |
| CWOA | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 3.96937E-06 | 7.32807E-06 | 7.32807E-06 | 7.32805E-06 |
| WW | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 3.45304E-05 | 1.19530E-04 | 1.19530E-04 | 1.19523E-04 |
| IJAYA | Friedman | 3.39792E-13 | 1.28075E-12 | 1.28075E-12 | 1.28075E-12 |
|  | Friedman Aligned | 5.86654E-11 | 2.16611E-10 | 2.16611E-10 | 2.16611E-10 |
|  | Quade | 1.88316E-02 | 6.53767E-02 | 6.53767E-02 | 6.36893E-02 |
| DE | Friedman | 3.97017E-11 | 1.46591E-10 | 1.46591E-10 | 1.46591E-10 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 2.72842E-03 | 1.00795E-02 | 1.00795E-02 | 1.00372E-02 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| GOTLBO | Friedman | 7.91529E-10 | 2.73991E-09 | 2.73991E-09 | 2.73991E-09 |
|  | Friedman Aligned | 7.86484E-11 | 2.72244E-10 | 2.72244E-10 | 2.72244E-10 |
|  | Quade | 4.08003E-04 | 1.50664E-03 | 1.50664E-03 | 1.50565E-03 |
| NDE | Friedman | 2.43840E-05 | 7.50278E-05 | 7.50278E-05 | 7.50257E-05 |
|  | Friedman Aligned | 4.29787E-02 | 1.32910E-01 | 1.32910E-01 | 1.26431E-01 |
|  | Quade | 1.90667E-01 | 6.00708E-01 | 6.00708E-01 | 4.78428E-01 |
| EBLSHADE | Friedman | 8.35516E-03 | 2.12229E-02 | 2.12229E-02 | 2.10732E-02 |
|  | Friedman Aligned | 2.36221E-01 | 6.11673E-01 | 6.11673E-01 | 4.95434E-01 |
|  | Quade | 4.32702E-01 | 1.0 | 8.37312E-01 | 7.62830E-01 |
| STLBO | Friedman | 3.89796E-01 | 7.32328E-01 | 5.00736E-01 | 5.98252E-01 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 8.19430E-01 | 1.0 | 8.37312E-01 | 9.57572E-01 |
| TLBO | Friedman | 5.00736E-01 | 7.32328E-01 | 5.00736E-01 | 5.98252E-01 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 8.37312E-01 | 1.0 | 8.37312E-01 | 9.57572E-01 |

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| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (NDE is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| NNA | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | 5.41163E-11 | 1.87326E-10 | 1.87326E-10 | 1.87326E-10 |
|  | Quade | 3.10829E-03 | 7.89971E-03 | 7.89971E-03 | 7.87141E-03 |
| GOTLBO | Friedman | 3.00204E-13 | 5.54223E-13 | 5.54223E-13 | 5.54223E-13 |
|  | Friedman Aligned | 4.81828E-11 | 1.77906E-10 | 1.44500E-10 | 1.77906E-10 |
|  | Quade | 4.64595E-02 | 1.73741E-01 | 1.73741E-01 | 1.61093E-01 |
| MABC | Friedman | 4.61314E-10 | 1.17103E-09 | 1.17103E-09 | 1.17103E-09 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 5.59004E-02 | 2.13496E-01 | 2.13496E-01 | 1.94925E-01 |
| WW | Friedman | 6.25900E-10 | 1.92585E-09 | 1.92585E-09 | 1.92585E-09 |
|  | Friedman Aligned | 4.81828E-11 | 1.77906E-10 | 1.44500E-10 | 1.77906E-10 |
|  | Quade | 9.17697E-03 | 3.18566E-02 | 3.18566E-02 | 3.14092E-02 |
| ISCA | Friedman | 2.74325E-09 | 9.49587E-09 | 9.49587E-09 | 9.49587E-09 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 5.89940E-03 | 1.81892E-02 | 1.81892E-02 | 1.80410E-02 |
| PSO | Friedman | 9.70417E-09 | 3.58308E-08 | 3.58308E-08 | 3.58308E-08 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 1.85637E-03 | 1.85796E-03 | 1.85796E-03 | 1.85637E-03 |
| CWOA | Friedman | 1.66888E-08 | 6.29039E-08 | 6.29039E-08 | 6.29039E-08 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 2.51164E-03 | 4.64181E-03 | 4.64181E-03 | 4.63194E-03 |
| DE | Friedman | 2.78979E-06 | 1.03008E-05 | 1.03008E-05 | 1.03007E-05 |
|  | Friedman Aligned | 4.81828E-11 | 1.77906E-10 | 1.44500E-10 | 1.77906E-10 |
|  | Quade | 1.39964E-01 | 5.31682E-01 | 5.31682E-01 | 4.26920E-01 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| IJAYA | Friedman | 2.78592E-03 | 9.64770E-03 | 9.64770E-03 | 9.61054E-03 |
|  | Friedman Aligned | 6.97744E-12 | 2.41527E-11 | 2.41527E-11 | 2.41527E-11 |
|  | Quade | 3.98964E-01 | 1.0 | 1.0 | 8.28345E-01 |
| EBLSHADE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| TLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| STLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

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| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (MABC is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| NNA | Friedman | 1.84192E-04 | 1.84208E-04 | 1.84208E-04 | 1.84192E-04 |
|  | Friedman Aligned | 2.16462E-08 | 7.49292E-08 | 7.49292E-08 | 7.49292E-08 |
|  | Quade | 7.49843E-01 | 1.0 | 1.0 | 9.37539E-01 |
| CWOA | Friedman | 4.68826E-04 | 8.65696E-04 | 8.65696E-04 | 8.65353E-04 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 7.49843E-01 | 1.0 | 1.0 | 8.86660E-01 |
| PSO | Friedman | 6.95410E-04 | 1.76574E-03 | 1.76574E-03 | 1.76433E-03 |
|  | Friedman Aligned | 9.16590E-11 | 2.82028E-10 | 2.82028E-10 | 2.82028E-10 |
|  | Quade | 7.49843E-01 | 1.0 | 1.0 | 7.49843E-01 |
| ISCA | Friedman | 2.17168E-03 | 6.68712E-03 | 6.68712E-03 | 6.66704E-03 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 7.49843E-01 | 1.0 | 1.0 | 9.84244E-01 |
| WW | Friedman | 6.72782E-03 | 2.33370E-02 | 2.33370E-02 | 2.30964E-02 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 7.90139E-01 | 1.0 | 1.0 | 9.95504E-01 |
| GOTLBO | Friedman | 4.97246E-01 | 1.0 | 1.0 | 9.21057E-01 |
|  | Friedman Aligned | 2.83114E-07 | 1.04534E-06 | 1.04534E-06 | 1.04534E-06 |
|  | Quade | 9.92459E-01 | 1.0 | 1.0 | 1.00000E+00 |
| DE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| EBLSHADE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| NDE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| TLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| STLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| IJAYA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

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| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (TLBO is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| GOTLBO | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | 7.88357E-11 | 2.72893E-10 | 2.72893E-10 | 2.72893E-10 |
|  | Quade | 9.04101E-04 | 3.33903E-03 | 3.33903E-03 | 3.33416E-03 |
| PSO | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 6.15979E-06 | 6.15981E-06 | 6.15981E-06 | 6.15979E-06 |
| ISCA | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 4.38663E-05 | 1.34975E-04 | 1.34975E-04 | 1.34967E-04 |
| NNA | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 1.69424E-05 | 4.30078E-05 | 4.30078E-05 | 4.30070E-05 |
| CWOA | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 1.12542E-05 | 2.07771E-05 | 2.07771E-05 | 2.07769E-05 |
| DE | Friedman | 9.58345E-13 | 3.53850E-12 | 3.53850E-12 | 3.53850E-12 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 5.39136E-03 | 1.99273E-02 | 1.99273E-02 | 1.97625E-02 |
| IJAYA | Friedman | 4.01779E-11 | 1.51440E-10 | 1.51440E-10 | 1.51440E-10 |
|  | Friedman Aligned | 6.08664E-11 | 2.24738E-10 | 2.24738E-10 | 2.24738E-10 |
|  | Quade | 3.27993E-02 | 1.14117E-01 | 1.14117E-01 | 1.09026E-01 |
| MABC | Friedman | 3.86006E-09 | 1.42525E-08 | 1.42525E-08 | 1.42525E-08 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 1.26435E-03 | 4.76701E-03 | 4.76701E-03 | 4.75728E-03 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| WW | Friedman | 1.00418E-08 | 3.47602E-08 | 3.47602E-08 | 3.47602E-08 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 8.64072E-05 | 2.99110E-04 | 2.99110E-04 | 2.99070E-04 |
| NDE | Friedman | 4.04427E-04 | 1.24445E-03 | 1.24445E-03 | 1.24387E-03 |
|  | Friedman Aligned | 4.22263E-02 | 1.30571E-01 | 1.30571E-01 | 1.24316E-01 |
|  | Quade | 2.72841E-01 | 8.69448E-01 | 8.69448E-01 | 6.24816E-01 |
| EBLSHADE | Friedman | 5.10673E-02 | 1.30152E-01 | 1.30152E-01 | 1.24587E-01 |
|  | Friedman Aligned | 2.33358E-01 | 6.04098E-01 | 6.04098E-01 | 4.90618E-01 |
|  | Quade | 5.61708E-01 | 1.0 | 1.0 | 8.76795E-01 |
| STLBO | Friedman | 8.41920E-01 | 1.0 | 1.0 | 9.66810E-01 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 9.65693E-01 | 1.0 | 1.0 | 9.98023E-01 |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 9.96305E-01 | 1.0 | 1.0 | 9.99968E-01 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (GOTLBO is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| NNA | Friedman | 1.52876E-02 | 1.53966E-02 | 1.53966E-02 | 1.52876E-02 |
|  | Friedman Aligned | <1E-13 | 1.64313E-13 | 1.64313E-13 | 1.64313E-13 |
|  | Quade | 8.40301E-01 | 1.0 | 1.0 | 9.71745E-01 |
| CWOA | Friedman | 2.63386E-02 | 4.91760E-02 | 4.91760E-02 | 4.80826E-02 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 8.40301E-01 | 1.0 | 1.0 | 9.40882E-01 |
| PSO | Friedman | 3.19246E-02 | 8.20536E-02 | 8.20536E-02 | 7.90607E-02 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 8.40301E-01 | 1.0 | 1.0 | 8.40301E-01 |
| ISCA | Friedman | 6.74279E-02 | 2.12506E-01 | 2.12506E-01 | 1.93294E-01 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 8.40301E-01 | 1.0 | 1.0 | 9.94931E-01 |
| WW | Friedman | 1.38347E-01 | 5.00951E-01 | 5.00951E-01 | 4.02758E-01 |
|  | Friedman Aligned | 1.15463E-13 | 3.99680E-13 | 3.99680E-13 | 3.99680E-13 |
|  | Quade | 8.62992E-01 | 1.0 | 1.0 | 9.98972E-01 |
| DE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| EBLSHADE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| NDE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| MABC | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| TLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| STLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| IJAYA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

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| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (STLBO is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| GOTLBO | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | 1.35278E-10 | 5.09895E-10 | 5.09895E-10 | 5.09895E-10 |
|  | Quade | 1.11445E-03 | 4.11614E-03 | 4.11614E-03 | 4.10873E-03 |
| PSO | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 8.22938E-06 | 8.22941E-06 | 8.22941E-06 | 8.22938E-06 |
| NNA | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 2.21284E-05 | 5.61727E-05 | 5.61727E-05 | 5.61713E-05 |
| CWOA | Friedman | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 1.48311E-05 | 2.73807E-05 | 2.73807E-05 | 2.73803E-05 |
| DE | Friedman | 2.32081E-13 | 8.03357E-13 | 8.03357E-13 | 8.03357E-13 |
|  | Friedman Aligned | 1.74950E-09 | 6.45968E-09 | 6.45968E-09 | 6.45968E-09 |
|  | Quade | 6.44257E-03 | 2.38175E-02 | 2.38175E-02 | 2.35824E-02 |
| IJAYA | Friedman | 2.17645E-10 | 8.03613E-10 | 8.03613E-10 | 8.03613E-10 |
|  | Friedman Aligned | 3.63299E-09 | 1.25757E-08 | 1.25757E-08 | 1.25757E-08 |
|  | Quade | 3.78757E-02 | 1.31885E-01 | 1.31885E-01 | 1.25109E-01 |
| MABC | Friedman | 1.75608E-09 | 6.61909E-09 | 6.61909E-09 | 6.61909E-09 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 1.54776E-03 | 5.83595E-03 | 5.83595E-03 | 5.82137E-03 |
| WW | Friedman | 7.44635E-09 | 2.74942E-08 | 2.74942E-08 | 2.74942E-08 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 1.10078E-04 | 3.81053E-04 | 3.81053E-04 | 3.80989E-04 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| ISCA | Friedman | 1.32325E-08 | 4.58048E-08 | 4.58048E-08 | 4.58048E-08 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 5.64886E-05 | 1.73815E-04 | 1.73815E-04 | 1.73801E-04 |
| NDE | Friedman | 9.57698E-04 | 2.94709E-03 | 2.94709E-03 | 2.94383E-03 |
|  | Friedman Aligned | 2.69373E-03 | 8.29097E-03 | 8.29097E-03 | 8.26522E-03 |
|  | Quade | 2.98714E-01 | 9.55486E-01 | 9.55486E-01 | 6.64392E-01 |
| EBLSHADE | Friedman | 8.62842E-02 | 2.20533E-01 | 2.20533E-01 | 2.04719E-01 |
|  | Friedman Aligned | 3.10807E-02 | 7.90881E-02 | 7.90881E-02 | 7.70214E-02 |
|  | Quade | 5.99120E-01 | 1.0 | 1.0 | 9.01765E-01 |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 3.64522E-01 | 6.83937E-01 | 3.45600E-01 | 5.66995E-01 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| TLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 3.64522E-01 | 6.83937E-01 | 3.45600E-01 | 5.66995E-01 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

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| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (PSO is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| NNA | Friedman | 9.99983E-01 | 1.0 | 1.0 | 9.99983E-01 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| CWOA | Friedman | 9.99995E-01 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| DE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| EBLSHADE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| NDE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| MABC | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| TLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| GOTLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| STLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| IJAYA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| ISCA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| WW | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

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| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (IJAYA is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| NNA | Friedman | 2.30926E-13 | 2.30926E-13 | 2.30926E-13 | 2.30926E-13 |
|  | Friedman Aligned | 1.12499E-10 | 3.46150E-10 | 3.31155E-10 | 3.46150E-10 |
|  | Quade | 8.09700E-02 | 2.12264E-01 | 2.12264E-01 | 1.92925E-01 |
| CWOA | Friedman | 1.65112E-12 | 3.04823E-12 | 3.04823E-12 | 3.04823E-12 |
|  | Friedman Aligned | 1.89312E-10 | 6.98998E-10 | 6.38521E-10 | 6.98998E-10 |
|  | Quade | 7.67278E-02 | 1.46479E-01 | 1.46479E-01 | 1.37035E-01 |
| PSO | Friedman | 4.53770E-12 | 1.15188E-11 | 1.15188E-11 | 1.15188E-11 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 7.25355E-02 | 7.50831E-02 | 7.50831E-02 | 7.25355E-02 |
| ISCA | Friedman | 4.61124E-11 | 1.41884E-10 | 1.41884E-10 | 1.41884E-10 |
|  | Friedman Aligned | 1.89312E-10 | 6.98998E-10 | 6.38521E-10 | 6.98998E-10 |
|  | Quade | 1.18124E-01 | 3.79398E-01 | 3.79398E-01 | 3.20761E-01 |
| WW | Friedman | 4.92686E-10 | 1.70545E-09 | 1.70545E-09 | 1.70545E-09 |
|  | Friedman Aligned | 1.12499E-10 | 3.46150E-10 | 3.31155E-10 | 3.46150E-10 |
|  | Quade | 1.50884E-01 | 5.48728E-01 | 5.48728E-01 | 4.32304E-01 |
| GOTLBO | Friedman | 1.73282E-05 | 6.39812E-05 | 6.39812E-05 | 6.39794E-05 |
|  | Friedman Aligned | <1E-13 | <1E-13 | <1E-13 | <1E-13 |
|  | Quade | 4.00601E-01 | 1.0 | 1.0 | 8.48902E-01 |
| MABC | Friedman | 1.41255E-03 | 5.32597E-03 | 5.32597E-03 | 5.31383E-03 |
|  | Friedman Aligned | 2.50170E-13 | 6.35048E-13 | 6.35048E-13 | 6.35048E-13 |
|  | Quade | 4.31768E-01 | 1.0 | 1.0 | 8.81218E-01 |
| DE | Friedman | 1.45627E-01 | 5.53869E-01 | 5.53869E-01 | 4.40731E-01 |
|  | Friedman Aligned | 6.44412E-02 | 2.40977E-01 | 2.40977E-01 | 2.18038E-01 |
|  | Quade | 6.85516E-01 | 1.0 | 1.0 | 9.86037E-01 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| EBLSHADE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| NDE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| TLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| STLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (ISCA is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| PSO | Friedman | 9.96127E-01 | 1.0 | 1.0 | 9.99999E-01 |
|  | Friedman Aligned | 7.63492E-05 | 7.63519E-05 | 7.63519E-05 | 7.63492E-05 |
|  | Quade | 9.99856E-01 | 1.0 | 1.0 | 9.99856E-01 |
| NNA | Friedman | 9.96127E-01 | 1.0 | 1.0 | 9.96127E-01 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 9.99856E-01 | 1.0 | 1.0 | 1.00000E+00 |
| CWOA | Friedman | 9.96127E-01 | 1.0 | 1.0 | 9.99961E-01 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 9.99856E-01 | 1.0 | 1.0 | 9.99998E-01 |
| DE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| EBLSHADE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| NDE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| MABC | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| TLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| GOTLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| STLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| IJAYA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| WW | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (NNA is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| DE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| EBLSHADE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| NDE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| MABC | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| TLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| GOTLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| STLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| PSO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 4.32987E-13 | 4.32987E-13 | 4.32987E-13 | 4.32987E-13 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| IJAYA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| ISCA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.32960E-02 | 2.46857E-02 | 2.46857E-02 | 2.44083E-02 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| CWOA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.65948E-02 | 4.23968E-02 | 4.23968E-02 | 4.15892E-02 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| WW | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 9.98955E-01 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

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| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (CWOA is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| NNA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| DE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| EBLSHADE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| NDE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| MABC | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| TLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| GOTLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| STLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| PSO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 3.02243E-05 | 3.02247E-05 | 3.02247E-05 | 3.02243E-05 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| IJAYA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| ISCA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 9.99995E-01 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| WW | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

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| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (WW is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| NNA | Friedman | 9.28732E-01 | 1.0 | 1.0 | 9.28732E-01 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 9.97795E-01 | 1.0 | 1.0 | 9.99987E-01 |
| PSO | Friedman | 9.31953E-01 | 1.0 | 1.0 | 9.98494E-01 |
|  | Friedman Aligned | 1.31051E-12 | 1.31051E-12 | 1.31051E-12 | 1.31051E-12 |
|  | Quade | 9.97795E-01 | 1.0 | 1.0 | 9.97795E-01 |
| CWOA | Friedman | 9.31953E-01 | 1.0 | 1.0 | 9.92999E-01 |
|  | Friedman Aligned | 2.65438E-02 | 6.80793E-02 | 6.80793E-02 | 6.60112E-02 |
|  | Quade | 9.97795E-01 | 1.0 | 1.0 | 9.99875E-01 |
| ISCA | Friedman | 9.79287E-01 | 1.0 | 1.0 | 9.99993E-01 |
|  | Friedman Aligned | 2.18559E-02 | 4.07276E-02 | 4.07276E-02 | 3.99759E-02 |
|  | Quade | 9.97795E-01 | 1.0 | 1.0 | 1.0 |
| DE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| EBLSHADE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| ADELI | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| NDE | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
| MABC | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| TLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| GOTLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| STLBO | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |
| IJAYA | Friedman | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Friedman Aligned | 1.0 | 1.0 | 1.0 | 1.0 |
|  | Quade | 1.0 | 1.0 | 1.0 | 1.0 |

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| --- | --- | --- | --- | --- | --- |
| **Table S3.** Adjusted *p*-values for multiple comparisons 1×*N* tests in IV-set case (ADELI is the control algorithm). | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |
| **Table S3** (*continued*) | | | | | |
| Algorithm | Test | post-hoc procedure | | | |
| Finner | Holm | Hochberg | Holland |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |
|  | Friedman |  |  |  |  |
|  | Friedman Aligned |  |  |  |  |
|  | Quade |  |  |  |  |