|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| P | Algorithm | 2 | 4 | 6 | 8 | 10 |
| D-1  D-2  D-3  D-4  D-5  D-6  D-7 | Isde+  Isde+-randW1  Isde+-RandW2  Isde+  Isde+-randW1  Isde+-RandW2  Isde+  Isde+-randW1  Isde+-RandW2  Isde+  Isde+-randW1  Isde+-RandW2  Isde+  Isde+-randW1  Isde+-RandW2  Isde+  Isde+-randW1  Isde+-RandW2  Isde+  Isde+-randW1  Isde+-RandW2 | 0.4958 0.0122  0.4947 0.0135  0.4895 0.0153  best =  9 3 2  0.2073 0.0077  0.2090 0.0118  0.2107 0.0121  best =  6 5 6  0.2059 0.0120  0.2152 0.0143  0.2046 0.0114  best =  9 7 5  0.2136 0.0100  0.2072 0.0148  0.2128 0.0127  best =  4 7 10  0.2061 0.0116  0.2120 0.0154  0.2095 0.0108  best =  2 6 1  0.2115 0.0071  0.2073 0.0071  0.2121 0.0122  best =  10 10 8  0.1347 0.0076  0.1358 0.0101  0.1455 0.0140  best =  4 9 1 | 0.9038 0.0074  0.8920 0.0085  0.8916 0.0124  best =  4 10 9  0.5633 0.0125  0.5585 0.0123  0.5556 0.0116  best =  10 6 9  0.5649 0.0170  0.5735 0.0197  0.5690 0.0172  best =  6 7 10  0.5427 0.0717  0.5638 0.0201  0.5604 0.0188  best =  4 7 2  0.2169 0.0102  0.2113 0.0131  0.2197 0.0101  best =  1 2 2  0.2985 0.0164  0.3022 0.0108  0.2946 0.0108  best =  2 9 7  0.1743 0.0132  0.1753 0.0164  0.1727 0.0094  best =  1 2 7 | 0.9666 0.0069  0.9587 0.0156  0.9649 0.0083  best =  3 6 10  0.7402 0.0093  0.7319 0.0103  0.7399 0.0167  best =  1 10 8  0.7335 0.0154  0.7414 0.0076  0.7192 0.0164  best =  1 6 6  0.7331 0.0135  0.7334 0.0292  0.7322 0.0222  best =  7 6 7  0.3187 0.0150  0.3130 0.0136  0.3175 0.0156  best =  4 8 6  0.7683 0.0144  0.7717 0.0150  0.7734 0.0183  best =  5 5 8  0.1451 0.0183  0.1423 0.0127  0.1372 0.0187  best =  8 10 3 | 0.9861 0.0035  0.9808 0.0052  0.9832 0.0039  best =  10 8 9  0.8472 0.0120  0.8315 0.0176  0.8448 0.0139  best =  9 6 5  0.8392 0.0154  0.8345 0.0112  0.8290 0.0220  best =  8 4 2  0.8432 0.0112  0.8463 0.0123  0.8355 0.0160  best =  7 1 7  0.5730 0.0142  0.5581 0.0211  0.5818 0.0195  best =  3 2 6  0.8539 0.0149  0.8551 0.0109  0.8469 0.0160  best =  5 5 6  0.1234 0.0199  0.1123 0.0180  0.1226 0.0230  best =  7 9 3 | 0.9938 0.0032  0.9956 0.0025  0.9961 0.0014  best =  8 7 9  0.9248 0.0084  0.9242 0.0068  0.9191 0.0079  best =  5 8 7  0.9038 0.0092  0.9037 0.0113  0.9031 0.0100  best =  5 2 10  0.9078 0.0109  0.9133 0.0089  0.9204 0.0110  best =  3 5 2  0.5347 0.0181  0.5294 0.0142  0.5326 0.0178  best =  5 10 5  0.8389 0.0138  0.8281 0.0098  0.8319 0.0111  best =  4 2 2  0.1474 0.0171  0.1665 0.0200  0.1582 0.0103  best =  7 2 8 |

Dec 18th: our indicator comparison with indicator with 5 random weight vectors comparison

Hyper volume comparison

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| P | Algorithm | 2 | 4 | 6 | 8 | 10 |
| D-1  D-2  D-3  D-4  D-5  D-6  D-7 | Isde+  Isde+rand\_5wt  Isde+  Isde+rand\_5wt  Isde+  Isde+rand\_5wt  Isde+  Isde+rand\_5wt  Isde+  Isde+rand\_5wt  Isde+  Isde+rand\_5wt  Isde+  Isde+rand\_5wt | 0.4896 0.0154  0.4943 0.0189  best = 19 19  0.2089 0.0148  0.2108 0.0142  best = 16 15  0.2086 0.0128  0.2061 0.0144  best = 13 22  0.2099 0.0129  0.2088 0.0113  best = 18 2  0.2082 0.0139  0.2080 0.0117  best = 17 13  0.2136 0.0135  0.2140 0.0128  best = 24 30  0.1393 0.0083  0.1382 0.0121  best = 27 11 | 0.8988 0.0092  0.9019 0.0108  best = 22 2  0.5659 0.0188  0.5501 0.0149  best = 23 15  0.9924 0.0030  0.9935 0.0034  best = 5 29  0.8603 0.0192  0.8619 0.0159  best = 18 7  0.2342 0.0112  0.2310 0.0167  best = 3 13  0.7379 0.0168  0.7408 0.0191  best = 26 2  0.1778 0.0175  0.1690 0.0137  best = 25 13 | 0.9668 0.0075  0.9658 0.0140  best = 20 3  0.7828 0.0138  0.7667 0.0132  best = 3 20  0.7550 0.0146  0.7200 0.0192  best = 28 17  0.9343 0.0102  0.9273 0.0183  best = 25 27  0.3920 0.0172  0.4121 0.0191  best = 4 1  0.8338 0.0146  0.8437 0.0160  best = 17 1  0.1474 0.0142  0.1235 0.0162  best = 24 23 | 0.9871 0.0042  0.9856 0.0149  best = 17 16  0.8936 0.0092  0.8721 0.0136  best = 15 26  0.8639 0.0130  0.8109 0.0213  best = 19 12  0.9732 0.0061  0.9693 0.0066  best = 9 9  0.5286 0.0189  0.5382 0.0203  best = 1 16  0.8588 0.0130  0.8668 0.0132  best = 24 21  0.1280 0.0155  0.0947 0.0162  best = 23 16 | 0.9962 0.0018  0.9970 0.0024  best = 10 6  0.9638 0.0075  0.9509 0.0091  best = 16 5  0.9250 0.0084  0.9042 0.0162  best = 24 27  0.9946 0.0023  0.9922 0.0025  best = 13 2  0.5764 0.0190  0.5776 0.0141  best = 29 24  0.8754 0.0132  0.8752 0.0120  best = 15 26  0.1147 0.0171  0.0828 0.0170  best = 15 24 |

Same above table with best HV & Mean HV

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| P | Algorithm | 2 | 4 | 6 | 8 | 10 |
| D-1  D-2  D-3  D-4  D-5  D-6  D-7 | Isde+  Isde+rand\_5wt  Isde+  Isde+rand\_5wt  Isde+  Isde+rand\_5wt  Isde+  Isde+rand\_5wt  Isde+  Isde+rand\_5wt  Isde+  Isde+rand\_5wt  Isde+  Isde+rand\_5wt | 0.5170  0.5290  0.4945 0.0138  0.4915 0.0138  best = 10 12  0.2360  0.2360  0.2120 0.0130  0.2093 0.0102  best = 2 20  0.2320  0.2290  0.2107 0.0114  0.2017 0.0095  best = 12 29  0.2360  0.2260  0.2112 0.0131  0.2085 0.0097  best = 20 6  0.2420  0.2320  0.2122 0.0113  0.2095 0.0129  best = 12 15  0.2350  0.2430  0.2110 0.0121  0.2125 0.0154  best = 27 14  0.1560  0.1610  0.1402 0.0101  0.1419 0.0107  best = 30 24 | 0.9180  0.9300  0.9008 0.0089  0.9041 0.0106  best = 12 23  0.5960  0.5860  0.5688 0.0162  0.5565 0.0168  best = 3 2  0.9980  0.9970  0.9927 0.0029  0.9929 0.0026  best = 3 18  0.8850  0.8800  0.8581 0.0207  0.8616 0.0162  best = 30 17  0.2530  0.2460  0.2194 0.0149  0.2282 0.0131  best = 4 21  0.7650  0.7680  0.7424 0.0119  0.7380 0.0148  best = 20 9  0.2000  0.1940  0.1758 0.0108  0.1663 0.0126  best = 10 2 | 0.9780  0.9830  0.9666 0.0080  0.9681 0.0157  best = 14 26  0.8150  0.8040  0.7827 0.0126  0.7694 0.0156  best = 1 1  0.7830  0.7640  0.7545 0.0134  0.7194 0.0190  best = 27 25  0.9520  0.9500  0.9347 0.0125  0.9274 0.0186  best = 7 6  0.4270  0.4370  0.3979 0.0139  0.4050 0.0165  best = 22 22  0.8470  0.8800  0.8307 0.0125  0.8450 0.0149  best = 8 11  0.1880  0.1500  0.1514 0.0200  0.1266 0.0147  best = 24 14 | 0.9950  0.9940  0.9877 0.0052  0.9848 0.0105  best = 25 1  0.9180  0.8950  0.8938 0.0075  0.8698 0.0141  best = 24 7  0.8860  0.8580  0.8645 0.0110  0.8138 0.0240  best = 5 17  0.9850  0.9810  0.9758 0.0057  0.9694 0.0067  best = 10 20  0.5510  0.5730  0.5303 0.0153  0.5378 0.0232  best = 4 7  0.8770  0.8810  0.8615 0.0105  0.8655 0.0105  best = 26 14  0.1600  0.1270  0.1323 0.0159  0.0909 0.0166  best = 7 18 | 1  1  0.9963 0.0019  0.9970 0.0021  best = 7 3  0.9770  0.9620  0.9638 0.0075  0.9523 0.0051  best = 29 19  0.9470  0.9310  0.9254 0.0089  0.9004 0.0159  best = 5 29  0.9980  0.9980  0.9930 0.0020  0.9928 0.0032  best = 26 24  0.6200  0.6280  0.5760 0.0188  0.5756 0.0192  best = 30 8  0.8960  0.9000  0.8766 0.0123  0.8782 0.0109  best = 25 28  0.1510  0.1100  0.1144 0.0165  0.0800 0.0155  best = 20 3 |