

| | base_line | | |
|-------------|-----------|--------|--------|
| | pro | sr | maxdd |
| ubah | -7.43 | -0.250 | 0.51 |
| best | 50.17 | 0.144 | 0.34 |
| bcrp | 59.53 | 0.237 | 0.41 |
| up | -15.21 | -0.255 | 0.68 |
| eg | -15.29 | -0.263 | 0.67 |
| ons | -92.23 | -0.445 | 0.99 |
| anticor | -82.12 | -0.496 | 0.93 |
| anticor_ant | -90.20 | -0.515 | 0.97 |
| pamr | -99.10 | -0.841 | 0.99 |
| pamr_1 | -99.06 | -0.837 | 0.99 |
| pamr_2 | -99.27 | -0.851 | 0.99 |
| cwmr_var | -99.19 | -0.856 | 0.99 |
| cwmr_sted | -99.20 | -0.856 | 0.99 |
| olmar1 | -99.52 | -0.825 | 1.00 |
| olmar2 | -99.59 | -0.847 | 1.00 |
| bk | 27.49 | 0.033 | 0.56 |
| bnn | 51.29 | 0.184 | 0.50 |
| corn | 130.56 | 0.410 | 0.59 |
| cornu | 61.22 | 0.195 | 0.65 |
| cornk | 148.22 | 0.365 | 0.74 |
| ucrp(rbh) | -15.38 | -0.256 | 0.6812 |

| | pro | sr | maxdd |
|---------------------|-----|----|-------|
| mem10240 | - | - | - |
| mem4096 exp512 | + | + | + |
| vs32 mem4096 exp512 | - | - | + |

dirich_spmv_ws68_gr10_sec10_pa1_g011_dr02_mem2048_exp256_ed16_nb16

| | pro | sr | maxdd | pro | sr | maxdd |
|-----|--------|--------|-------|--------|-------|-------|
| 1 | -46.65 | -0.244 | 78.37 | -15.38 | 0.025 | 68.12 |
| 2 | -61.97 | -0.495 | 73.27 | -15.38 | 0.025 | 68.12 |
| 3 | -6.59 | 0.112 | 66.81 | -15.38 | 0.025 | 68.12 |
| 4 | -5.40 | 0.111 | 60.98 | -15.38 | 0.025 | 68.12 |
| 5 | -51.49 | -0.172 | 81.34 | -15.38 | 0.025 | 68.12 |
| 6 | -45.84 | -0.105 | 78.90 | -15.38 | 0.025 | 68.12 |
| 7 | -15.67 | 0.033 | 66.45 | -15.38 | 0.025 | 68.12 |
| 8 | -29.74 | -0.053 | 75.93 | -15.38 | 0.025 | 68.12 |
| 9 | -38.44 | -0.093 | 72.51 | -15.38 | 0.025 | 68.12 |
| 10 | -42.13 | -0.157 | 75.81 | -15.38 | 0.025 | 68.12 |
| avg | -34.39 | -0.106 | 73.04 | -15.38 | 0.025 | 68.12 |
| std | 19.43 | 0.181 | 6.46 | 0.00 | 0.000 | 0.00 |

dirich_spmv_ws68_gr10_sec10_pa1_g011_dr02_mem10240_exp256_ed16_nb16

| | pro | sr | maxdd | pro | sr | maxdd |
|-----|--------|--------|-------|--------|-------|-------|
| 1 | -52.10 | -0.395 | 68.75 | -15.38 | 0.025 | 68.12 |
| 2 | -48.50 | -0.263 | 77.32 | -15.38 | 0.025 | 68.12 |
| 3 | -32.53 | -0.136 | 66.97 | -15.38 | 0.025 | 68.12 |
| 4 | -76.33 | -0.605 | 86.85 | -15.38 | 0.025 | 68.12 |
| 5 | -31.30 | -0.079 | 72.77 | -15.38 | 0.025 | 68.12 |
| 6 | -55.59 | -0.247 | 77.28 | -15.38 | 0.025 | 68.12 |
| 7 | -42.77 | -0.212 | 65.40 | -15.38 | 0.025 | 68.12 |
| 8 | -25.32 | -0.049 | 69.99 | -15.38 | 0.025 | 68.12 |
| 9 | -76.50 | -0.646 | 88.99 | -15.38 | 0.025 | 68.12 |
| 10 | -68.66 | -0.411 | 88.99 | -15.38 | 0.025 | 68.12 |
| avg | -50.96 | -0.304 | 76.33 | -15.38 | 0.025 | 68.12 |
| std | 18.53 | 0.207 | 9.13 | 0.00 | 0.000 | 0.00 |

dirich_spmv_ws68_gr10_sec10_pa1_g011_dr02_mem4096_exp512_ed16_nb16

| | pro | sr | maxdd | pro | sr | maxdd |
|-----|--------|--------|-------|--------|-------|-------|
| 1 | 23.85 | 0.293 | 59.04 | -15.38 | 0.025 | 68.12 |
| 2 | 85.70 | 0.513 | 57.26 | -15.38 | 0.025 | 68.12 |
| 3 | 11.10 | 0.224 | 60.16 | -15.38 | 0.025 | 68.12 |
| 4 | 87.48 | 0.495 | 70.04 | -15.38 | 0.025 | 68.12 |
| 5 | 20.55 | 0.287 | 68.56 | -15.38 | 0.025 | 68.12 |
| 6 | 9.37 | 0.208 | 52.85 | -15.38 | 0.025 | 68.12 |
| 7 | -55.12 | -0.314 | 79.46 | -15.38 | 0.025 | 68.12 |
| 8 | -78.95 | -0.189 | 91.99 | -15.38 | 0.025 | 68.12 |
| 9 | -25.06 | -0.051 | 70.72 | -15.38 | 0.025 | 68.12 |
| 10 | -82.60 | -0.219 | 94.02 | -15.38 | 0.025 | 68.12 |
| avg | -0.37 | 0.125 | 70.41 | -15.38 | 0.025 | 68.12 |
| std | 60.48 | 0.298 | 14.24 | 0.00 | 0.000 | 0.00 |

dirich_spmv_ws32_gr10_sec10_pa1_g011_dr02_mem4096_exp512_ed16_nb16

| | pro | sr | maxdd | pro | sr | maxdd |
|-----|--------|--------|-------|--------|-------|-------|
| 1 | 3.66 | 0.162 | 58.69 | -15.38 | 0.025 | 68.12 |
| 2 | -37.02 | -0.034 | 77.16 | -15.38 | 0.025 | 68.12 |
| 3 | -58.43 | -0.486 | 64.64 | -15.38 | 0.025 | 68.12 |
| 4 | -6.75 | 0.141 | 66.25 | -15.38 | 0.025 | 68.12 |
| 5 | 17.42 | 0.289 | 75.37 | -15.38 | 0.025 | 68.12 |
| 6 | -60.65 | -0.291 | 75.17 | -15.38 | 0.025 | 68.12 |
| 7 | -54.22 | -0.393 | 65.17 | -15.38 | 0.025 | 68.12 |
| 8 | -45.32 | -0.287 | 65.70 | -15.38 | 0.025 | 68.12 |
| 9 | -47.35 | -0.231 | 76.28 | -15.38 | 0.025 | 68.12 |
| 10 | -88.62 | -0.366 | 96.17 | -15.38 | 0.025 | 68.12 |
| avg | -37.73 | -0.150 | 72.06 | -15.38 | 0.025 | 68.12 |
| std | 32.80 | 0.269 | 10.55 | 0.00 | 0.000 | 0.00 |

addnorm_ws36_gr10_sec10_g01d5_dr02_mem10240_exp256_ed16_nb16

| | pro | sr | maxdd | pro | sr | maxdd |
|-----|--------|--------|-------|--------|-------|-------|
| 1 | -55.54 | -0.298 | 67.05 | -15.38 | 0.025 | 68.12 |
| 2 | -57.24 | -0.342 | 70.54 | -15.38 | 0.025 | 68.12 |
| 3 | -47.01 | -0.211 | 54.31 | -15.38 | 0.025 | 68.12 |
| 4 | -64.26 | -0.447 | 67.10 | -15.38 | 0.025 | 68.12 |
| 5 | -51.57 | -0.247 | 76.39 | -15.38 | 0.025 | 68.12 |
| 6 | -47.08 | -0.213 | 60.89 | -15.38 | 0.025 | 68.12 |
| 7 | -48.01 | -0.222 | 59.27 | -15.38 | 0.025 | 68.12 |
| 8 | -63.59 | -0.455 | 65.55 | -15.38 | 0.025 | 68.12 |
| 9 | -76.82 | -0.64 | 78.63 | -15.38 | 0.025 | 68.12 |
| 10 | -31.15 | -0.055 | 63.39 | -15.38 | 0.025 | 68.12 |
| avg | -54.23 | -0.313 | 66.31 | -15.38 | 0.025 | 68.12 |
| std | 12.43 | 0.165 | 7.49 | 0.00 | 0.000 | 0.00 |

costth0.4_ws32_mem10240_nb16_exp256_es16_g0.5-0-0.5

| | pro | sr | maxdd | pro | sr | maxdd |
|---|--------|--------|-------|--------|-------|-------|
| 1 | 10.974 | 0.218 | 44.58 | -15.38 | 0.025 | 68.12 |
| 2 | -31.11 | -0.064 | 70.44 | -15.38 | 0.025 | 68.12 |
| 3 | -35.23 | -0.168 | 62.53 | -15.38 | 0.025 | 68.12 |
| 4 | 55.45 | 0.445 | 45.03 | -15.38 | 0.025 | 68.12 |
| 5 | 54.25 | 0.42 | 41.16 | -15.38 | 0.025 | 68.12 |
| 6 | -22.33 | -0.044 | 70.6 | -15.38 | 0.025 | 68.12 |
| 7 | 143 | 0.699 | 39.56 | -15.38 | 0.025 | 68.12 |
| 8 | -26.18 | -0.032 | 68.03 | -15.38 | 0.025 | 68.12 |
| 9 | -41.1 | -0.161 | 73.56 | -15.38 | 0.025 | 68.12 |

| | | | | | | |
|---------|-------|--------|--------|--------|-------|-------|
| 10 | 34.05 | 0.319 | 67.09 | -15.38 | 0.025 | 68.12 |
| average | 14.18 | 0.1632 | 58.258 | -15.38 | 0.025 | 68.12 |
| stdev | 58.52 | 0.30 | 13.87 | 0.00 | 0.000 | 0.00 |

costth0.5_ws32_mem10240_nb16_exp256_es16_g0.5-0-0.5

| | pro | sr | maxdd | pro | sr | maxdd |
|---------|--------|--------|-------|--------|-------|-------|
| 1 | 40.30 | 0.385 | 55.57 | -15.38 | 0.025 | 68.12 |
| 2 | -2.44 | 0.123 | 69.19 | -15.38 | 0.025 | 68.12 |
| 3 | -57.91 | -0.428 | 73.35 | -15.38 | 0.025 | 68.12 |
| 4 | -24.86 | -0.028 | 67.3 | -15.38 | 0.025 | 68.12 |
| 5 | 30.00 | 0.330 | 39.94 | -15.38 | 0.025 | 68.12 |
| 6 | -4.61 | 0.117 | 54.25 | -15.38 | 0.025 | 68.12 |
| 7 | -17.37 | 0.034 | 56.85 | -15.38 | 0.025 | 68.12 |
| 8 | -16.89 | 0.024 | 54.67 | -15.38 | 0.025 | 68.12 |
| 9 | -11.34 | 0.060 | 63.49 | -15.38 | 0.025 | 68.12 |
| 10 | 69.43 | 0.458 | 63.03 | -15.38 | 0.025 | 68.12 |
| average | 0.43 | 0.108 | 59.76 | -15.38 | 0.025 | 68.12 |
| stdev | 36.60 | 0.252 | 9.60 | 0.00 | 0.000 | 0.00 |

costth0.6_ws32_mem10240_nb16_exp256_es16_g0.5-0-0.5

| | pro | sr | maxdd | pro | sr | maxdd |
|---------|--------|--------|-------|--------|-------|-------|
| 1 | 67.56 | 0.433 | 57.4 | -15.38 | 0.025 | 68.12 |
| 2 | 67.87 | 0.425 | 61.55 | -15.38 | 0.025 | 68.12 |
| 3 | 75.10 | 0.458 | 47.21 | -15.38 | 0.025 | 68.12 |
| 4 | 6.47 | 0.190 | 46.05 | -15.38 | 0.025 | 68.12 |
| 5 | 51.56 | 0.410 | 48.88 | -15.38 | 0.025 | 68.12 |
| 6 | 24.50 | 0.290 | 64.37 | -15.38 | 0.025 | 68.12 |
| 7 | -31.73 | -0.082 | 60.52 | -15.38 | 0.025 | 68.12 |
| 8 | -28.57 | -0.046 | 69.91 | -15.38 | 0.025 | 68.12 |
| 9 | 60.57 | 0.446 | 50.88 | -15.38 | 0.025 | 68.12 |
| 10 | 110.12 | 0.621 | 37.83 | -15.38 | 0.025 | 68.12 |
| average | 40.35 | 0.31 | 54.46 | -15.38 | 0.025 | 68.12 |
| stdev | 46.49 | 0.229 | 9.87 | 0.00 | 0.000 | 0.00 |

costth0.4_ws32_mem10240_nb8_exp256_es16_g0.5-0-0.5

| | pro | sr | maxdd | pro | sr | maxdd |
|---------|--------|--------|-------|--------|-------|-------|
| 1 | -18.34 | 0.027 | 57.70 | -15.38 | 0.025 | 68.12 |
| 2 | -44.28 | -0.166 | 70.29 | -15.38 | 0.025 | 68.12 |
| 3 | 105.06 | 0.548 | 47.15 | -15.38 | 0.025 | 68.12 |
| 4 | 8.47 | 0.262 | 69.88 | -15.38 | 0.025 | 68.12 |
| 5 | -29.41 | -0.064 | 53.69 | -15.38 | 0.025 | 68.12 |
| 6 | -7.46 | 0.108 | 64.56 | -15.38 | 0.025 | 68.12 |
| 7 | 36.75 | 0.348 | 63.57 | -15.38 | 0.025 | 68.12 |
| 8 | 28.27 | 0.310 | 62.93 | -15.38 | 0.025 | 68.12 |
| 9 | 142.49 | 0.710 | 47.95 | -15.38 | 0.025 | 68.12 |
| 10 | -0.59 | 0.149 | 62.26 | -15.38 | 0.025 | 68.12 |
| average | 22.10 | 0.22 | 60.00 | -15.38 | 0.025 | 68.12 |
| stdev | 59.53 | 0.270 | 8.21 | 0.00 | 0.000 | 0.00 |

costth0.5_ws32_mem10240_nb8_exp256_es16_g0.5-0-0.5

| | pro | sr | maxdd | pro | sr | maxdd |
|---|--------|--------|-------|--------|-------|-------|
| 1 | -19.86 | 0.001 | 62.92 | -15.38 | 0.025 | 68.12 |
| 2 | -23.77 | -0.024 | 65.10 | -15.38 | 0.025 | 68.12 |
| 3 | 59.08 | 0.466 | 43.42 | -15.38 | 0.025 | 68.12 |
| 4 | -71.62 | -0.604 | 86.25 | -15.38 | 0.025 | 68.12 |

| | | | | | | |
|---------|--------|--------|-------|--------|-------|-------|
| 5 | 23.75 | 0.293 | 57.06 | -15.38 | 0.025 | 68.12 |
| 6 | -18.18 | 0.012 | 60.90 | -15.38 | 0.025 | 68.12 |
| 7 | 35.14 | 0.344 | 57.15 | -15.38 | 0.025 | 68.12 |
| 8 | -27.22 | -0.035 | 67.59 | -15.38 | 0.025 | 68.12 |
| 9 | 113.39 | 0.660 | 43.87 | -15.38 | 0.025 | 68.12 |
| 10 | -20.37 | 0.028 | 62.92 | -15.38 | 0.025 | 68.12 |
| average | 5.04 | 0.11 | 60.72 | -15.38 | 0.025 | 68.12 |
| stdev | 53.20 | 0.349 | 12.19 | 0.00 | 0.000 | 0.00 |