

| Dataset | Objects | Features | Clusters | 0.5% CS | | | | | | COPKM | LCC | CSC | DILS | KMEANS |
|----------|---------|----------|----------|----------------|--------------|-----------|-----------|------------|--------------|-----------|-----------|-----------|-----------|--------|
| | | | | PCCC-N2-S | PCCC-N3-S | PCCC-N4-S | PCCC-N5-S | PCCC-N6-S | PCCC-N2-S-RD | | | | | |
| Banana | 5,300 | 2 | 2 | 5.8 | 6.5 | 5.9 | 6.0 | 5.3 | 19.7 | – | 94.1 | 4,415.0 | 3,622.2 | 0 |
| Letter | 20,000 | 16 | 26 | 65.4 | 110.1 | 134.5 | 165.1 | 134.7 | 297.0 | 846.1 | 3,642.4 | – | 4,459.9 | 0 |
| Shuttle | 57,999 | 9 | 7 | 15.4 | 49.9 | 63.1 | 73.7 | 89.1 | 63.3 | – | 4,926.2 | – | – | 0 |
| CIFAR10 | 60,000 | 3,072 | 10 | 745.7 | 705.8 | 1,551.7 | 1,773.4 | 2,548.4 | 2,063.8 | – | – | – | – | 16 |
| CIFAR100 | 60,000 | 3,072 | 100 | 3,607.4 | 3,623.0 | 3,623.4 | 3,628.8 | 3,616.9 | 3,613.3 | – | – | – | – | 86 |
| MNIST | 70,000 | 784 | 10 | 512.0 | 1,400.4 | 1,745.2 | 2,172.2 | 2,115.4 | 1,156.2 | 3,884.6 | – | – | – | 4 |
| Sum | | | | 4,951.8 | 5,895.7 | 7,123.8 | 7,819.2 | 8,509.8 | 7,213.3 | 19,130.7* | 19,462.7* | 22,415.0* | 22,482.1* | 108 |

*Nan values (–) are replaced with 3,600 before computing the sum.

Table W117: Average running times (in seconds) of the versions of the PCCC algorithm and the four state-of-the-art algorithms (COPKM, CSC, DILS, LCC) for the constraint sets of size 0.5% CS. Higher values indicate better separated clusters. The lowest values are stated in bold. The column KMEANS reports the average running time of the unconstrained k-means algorithm. The hyphen indicates that the respective algorithm returned no solution within the time limit of 1,800 seconds.