

Dataset	Objects	Features	Clusters	0% 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	4.9	5.7	5.0	5.2	5.2	6.3	1.0	—	5,208.4	3,849.2	0
Letter	20,000	16	26	139.4	202.6	244.5	282.0	287.1	149.0	1,023.6	—	—	4,450.1	0
Shuttle	57,999	9	7	31.2	115.4	134.0	163.9	170.1	146.8	233.5	—	—	—	0
CIFAR10	60,000	3,072	10	319.7	1,501.0	1,596.1	1,717.3	1,684.0	3,344.0	—	—	—	—	16
CIFAR100	60,000	3,072	100	1,063.6	3,622.6	3,625.2	3,625.8	3,615.2	3,618.4	—	—	—	—	84
MNIST	70,000	784	10	159.7	1,688.0	1,940.1	2,188.4	2,220.3	2,766.2	3,715.8	—	—	—	4
Sum				1,718.5	7,135.3	7,544.9	7,982.6	7,981.9	10,030.8	12,173.9*	21,600.0*	23,208.4*	22,699.4*	106

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

Table W116: 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% 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.