

Dataset	Objects	Features	Clusters	0.5% CS							
				PCCC-N2-S	PCCC-N5-S	PCCC-N2-S-RD	COPKM	LCC	CSC	DILS	KMEANS
Banana	5,300	2	2	5.8	6.0	19.7	–	94.1	4,415.0	3,622.2	0.0
Letter	20,000	16	26	65.4	165.1	297.0	846.1	3,642.4	–	4,459.9	0.5
Shuttle	57,999	9	7	15.4	73.7	63.3	–	4,926.2	–	–	0.3
CIFAR 10	60,000	3,072	10	745.7	1,773.4	2,063.8	–	–	–	–	16.8
CIFAR 100	60,000	3,072	100	3,607.4	3,628.8	3,613.3	–	–	–	–	86.0
MNIST	70,000	784	10	512.0	2,172.2	1,156.2	3,884.6	–	–	–	4.3
Sum				4,951.8	7,819.2	7,213.3	19,130.7*	19,462.7*	22,415.0*	22,482.1*	108.0

*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.