

Dataset	5% CS								KMEANS
	PCCC	PCCC-N2-S	PCCC-N5-S	PCCC-N2-S-RD	COPKM	CSC	DILS	LCC	
n500-k2	0.3	0.5	0.4	1.4	–	2.9	3,039.7	8.2	0.3
n500-k5	1.3	0.8	1.6	2.1	0.1	2.9	2,506.3	20.2	0.1
n500-k10	4.6	0.8	2.0	2.7	0.3	2.7	2,549.4	28.7	0.1
n500-k20	12.7	1.5	3.9	3.2	0.6	3.0	2,441.9	47.1	0.1
n500-k50	21.6	0.9	1.9	3.2	2.6	3.7	2,507.1	108.4	0.1
n500-k100	27.1	0.6	1.4	2.3	8.6	2.7	2,411.4	210.6	0.2
n1000-k2	0.3	0.6	0.6	1.0	4.2	23.4	3,612.9	165.3	0.1
n1000-k5	5.3	2.3	6.5	5.7	–	22.9	3,617.4	37.3	0.1
n1000-k10	8.9	1.4	4.7	4.4	0.5	24.4	3,606.4	63.3	0.2
n1000-k20	27.4	2.0	6.3	7.7	1.8	22.9	3,620.8	104.2	0.1
n1000-k50	52.5	1.5	4.0	6.4	6.0	24.9	3,611.6	232.5	0.2
n1000-k100	122.2	1.7	3.8	5.1	18.6	25.5	3,630.2	–	0.2
n2000-k2	0.5	0.7	0.6	1.4	503.5	263.6	3,716.9	3,669.7	0.3
n2000-k5	5.2	1.8	6.7	6.4	3.0	267.3	3,661.7	403.9	0.2
n2000-k10	24.8	2.2	8.8	4.9	1.2	270.6	3,651.1	136.2	0.4
n2000-k20	132.3	6.8	18.3	15.6	3.6	280.1	3,646.3	254.1	0.2
n2000-k50	303.6	5.3	13.2	17.0	14.3	277.3	3,615.8	537.3	0.7
n2000-k100	462.2	4.0	10.5	10.3	41.4	270.1	3,627.7	1,006.2	0.4
n5000-k2	0.6	0.4	0.5	1.2	–	2,764.0	4,006.1	3,793.6	0.4
n5000-k5	4.6	1.9	6.6	5.7	5,929.3	2,770.6	3,815.8	3,802.6	0.3
n5000-k10	79.8	4.3	18.2	11.9	–	2,696.5	3,860.4	3,863.2	0.5
n5000-k20	857.0	8.9	135.4	45.6	–	2,733.4	3,772.5	2,310.8	0.4
n5000-k50	238.5	12.9	51.7	53.5	45.0	2,730.1	3,813.6	2,283.4	0.6
n5000-k100	446.8	16.0	53.5	38.8	116.9	2,639.6	3,759.0	3,608.7	0.6
Sum	2,840.1	79.6	361.1	257.5	24,701.6*	18,125.0	82,102.0	30,295.4*	6.9

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

Table W96: 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 5% CS. 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 3,600 seconds.