

Dataset	0% CS								KMEANS
	PCCC	PCCC-N2-S	PCCC-N5-S	PCCC-N2-S-RD	COPKM	CSC	DILS	LCC	
n500-k2	0.5	0.5	0.6	0.7	<b>0.1</b>	2.7	2,718.1	–	0.3
n500-k5	1.1	0.7	1.4	0.9	<b>0.1</b>	2.9	2,459.8	–	0.2
n500-k10	1.5	0.6	1.1	0.8	<b>0.3</b>	3.2	2,414.0	–	0.5
n500-k20	3.1	<b>0.6</b>	1.2	0.8	<b>0.6</b>	3.0	2,484.1	–	0.3
n500-k50	7.8	<b>0.7</b>	1.3	0.9	2.6	11.0	2,313.2	–	0.2
n500-k100	14.7	<b>0.6</b>	1.0	0.9	<b>8.7</b>	4.2	2,307.5	–	0.5
n1000-k2	0.7	0.8	0.8	1.5	<b>0.1</b>	25.0	3,639.8	–	0.2
n1000-k5	1.8	1.1	2.2	1.5	<b>0.2</b>	27.8	3,614.3	–	0.2
n1000-k10	3.1	1.1	2.2	1.7	<b>0.6</b>	27.1	3,614.5	–	0.2
n1000-k20	9.0	<b>1.7</b>	3.3	2.3	<b>1.7</b>	31.5	3,618.3	–	0.2
n1000-k50	19.0	<b>1.7</b>	3.2	2.4	5.7	32.1	3,614.9	–	0.2
n1000-k100	30.1	<b>1.5</b>	2.7	2.2	18.3	34.1	3,617.5	–	0.6
n2000-k2	2.1	2.4	2.2	3.0	<b>0.2</b>	243.1	3,682.0	–	0.2
n2000-k5	3.4	1.7	3.0	2.7	<b>0.4</b>	258.7	3,675.7	–	0.4
n2000-k10	8.6	2.7	5.3	3.4	<b>1.2</b>	259.6	3,651.8	–	0.4
n2000-k20	31.6	7.7	11.9	6.5	<b>3.8</b>	262.5	3,609.1	–	0.5
n2000-k50	49.2	<b>4.8</b>	8.1	5.1	11.9	268.8	3,663.2	–	0.5
n2000-k100	81.9	4.8	7.4	<b>4.7</b>	39.9	271.6	3,631.1	–	0.6
n5000-k2	5.0	4.7	5.0	5.3	<b>0.7</b>	3,269.0	3,869.5	–	0.5
n5000-k5	9.9	6.1	8.8	6.2	<b>1.4</b>	3,462.1	3,771.3	–	0.5
n5000-k10	26.8	10.7	16.4	8.7	<b>3.3</b>	3,682.9	3,746.6	–	0.4
n5000-k20	78.0	17.3	27.4	13.3	<b>9.8</b>	3,633.0	3,685.8	–	0.9
n5000-k50	207.4	20.3	32.2	<b>15.0</b>	41.3	3,499.3	3,718.3	–	0.9
n5000-k100	315.4	15.6	24.6	<b>12.7</b>	105.8	3,609.3	3,731.3	–	1.1
Sum	911.5	110.3	173.2	<b>103.1</b>	258.5	22,924.5	80,851.8	86,400.0*	10.6

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

Table W95: 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. 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.