

| Dataset         | 20% CS   |          |           |          |          |          | KMEANS |
|-----------------|----------|----------|-----------|----------|----------|----------|--------|
|                 | PCCC     | PCCC-R   | COPKM     | CSC      | DILS     | LCC      |        |
| Appendicitis    | <b>0</b> | <b>0</b> | –         | <b>0</b> | <b>0</b> | 20       | 19     |
| Breast Cancer   | <b>0</b> | <b>0</b> | <b>0</b>  | 2,930    | <b>0</b> | –        | 587    |
| Bupa            | <b>0</b> | <b>0</b> | <b>0</b>  | 1,116    | <b>0</b> | <b>0</b> | 875    |
| Circles         | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b> | <b>0</b> | –        | 468    |
| Ecoli           | <b>0</b> | <b>0</b> | –         | 136      | 13       | 141      | 198    |
| Glass           | <b>0</b> | <b>0</b> | –         | 157      | 1        | 63       | 215    |
| Haberman        | <b>0</b> | <b>0</b> | <b>0</b>  | 745      | <b>0</b> | <b>0</b> | 473    |
| Hayesroth       | <b>0</b> | <b>0</b> | –         | 124      | <b>0</b> | 24       | 106    |
| Heart           | <b>0</b> | <b>0</b> | <b>0</b>  | 27       | <b>0</b> | <b>0</b> | 219    |
| Ionosphere      | <b>0</b> | <b>0</b> | <b>0</b>  | 1,075    | <b>0</b> | –        | 463    |
| Iris            | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> | 1      |
| Led7Digit       | <b>0</b> | <b>0</b> | –         | 1,445    | 98       | 449      | 327    |
| Monk2           | <b>0</b> | <b>0</b> | <b>0</b>  | 82       | <b>0</b> | –        | 895    |
| Moons           | <b>0</b> | <b>0</b> | <b>0</b>  | 16       | <b>0</b> | <b>0</b> | 225    |
| Movement Libras | <b>0</b> | <b>0</b> | –         | 273      | 15       | 98       | 147    |
| Newthyroid      | <b>0</b> | <b>0</b> | <b>0</b>  | 29       | <b>0</b> | 50       | 193    |
| Saheart         | <b>0</b> | <b>0</b> | <b>0</b>  | 1,914    | <b>0</b> | –        | 928    |
| Sonar           | <b>0</b> | <b>0</b> | <b>0</b>  | 416      | <b>0</b> | <b>0</b> | 231    |
| Soybean         | <b>0</b> | <b>0</b> | <b>0</b>  | 2        | <b>0</b> | 1        | 0      |
| Spectfheart     | <b>0</b> | <b>0</b> | <b>0</b>  | 463      | <b>0</b> | <b>0</b> | 390    |
| Spiral          | <b>0</b> | <b>0</b> | –         | <b>0</b> | <b>0</b> | <b>0</b> | 432    |
| Tae             | <b>0</b> | <b>0</b> | –         | 106      | <b>0</b> | 63       | 120    |
| Vehicle         | <b>0</b> | <b>0</b> | <b>0</b>  | 5,635    | 373      | –        | 3,088  |
| Wine            | <b>0</b> | <b>0</b> | <b>0</b>  | 4        | <b>0</b> | <b>0</b> | 23     |
| Zoo             | <b>0</b> | <b>0</b> | <b>0</b>  | 29       | <b>0</b> | 1        | 4      |
| Mean            | <b>0</b> | <b>0</b> | <b>0*</b> | 669      | 20       | 48*      | 425    |

\*Nan values (–) are ignored when computing the sum.

Table W20: Average number of cannot-link constraint violations of the PCCC and the PCCC-R algorithms and the four state-of-the-art algorithms (COPKM, CSC, DILS, LCC) for the constraint sets of size 20% CS. The lowest values are stated in bold. The column KMEANS reports the average number of cannot-link constraint violations obtained with the k-means algorithm. The hyphen indicates that the respective algorithm returned no solution within the time limit of 1,800 seconds.