

Empty map				Dense map				20 agents			
k	CG	DG	WDG	k	CG	DG	WDG	obs	CG	DG	WDG
30	0.2	1.0	1.2	16	3.9	3.9	11.6	0	0.1	0.5	0.5
40	0.5	1.7	2.0	20	4.8	4.8	15.2	10	1.0	1.3	2.1
50	0.6	2.3	2.8	24	6.9	7.0	22.2	20	3.0	3.1	6.2

Table 1: Average h -values of the root CT node. k represents the number of agents, and obs represents the percentage of cells that are randomly blocked on a 20×20 grid.

SmallMaps-20x20grids

Agents	Instances	ICBS	CG	DG	WDG
Nodes ($\times 1000$)					
30	44	3.6	2.6	0.5	0.5
40	39	8.9	7.0	0.2	0.2
50	23	12.4	10.1	2.9	2.9
Runtime (s)					
30	44	0.5	0.4	0.1	0.1
40	39	1.0	0.9	0.1	0.1
50	23	1.7	1.5	0.6	0.7

(a) Empty map.

Agents	Instances	ICBS	CG	DG	WDG
Nodes ($\times 1000$)					
16	47	20.2	9.6	7.8	6.1
20	29	20.2	13.6	10.7	8.9
24	7	79.6	47.4	33.2	15.2
Runtime (s)					
16	47	7.0	2.4	2.4	2.4
20	29	4.0	3.3	2.1	1.9
24	7	17.9	9.6	5.4	3.0

(b) Dense map.

Table 2: Average expanded CT nodes and average runtime over instances solved by all solvers.

Larger h-value

Largen-value





no blocked cells

no block reads



30% randomly blocked cells



Smaller number of expanded CT nodes











Empty map				Dense map				20 agents			
k	CG	DG	WDG	k	CG	DG	WDG	obs	CG	DG	WDG
30	0.2	1.0	1.2	16	3.9	3.9	11.6	0	0.1	0.5	0.5
40	0.5	1.7	2.0	20	4.8	4.8	15.2	10	1.0	1.3	2.1
50	0.6	2.3	2.8	24	6.9	7.0	22.2	20	3.0	3.1	6.2

Table 1: Average h -values of the root CT node. k represents the number of agents, and obs represents the percentage of cells that are randomly blocked on a 20×20 grid.

SmallMaps-20x20grids







