

Table 1: Evacuation Performance

| Method | Time | Success Rate |
|---------------------------|--------|--------------|
| baseline | 25.3 s | 95.2% |
| baseline | 25.3 s | 95.2% |
| baseline (with obstacles) | 27.8 s | 92.1% |
| layered | 22.1 s | 98.5% |
| layered (with obstacles) | 24 s | 96.3% |
| graph | 23.8 s | 96.8% |
| graph (with obstacles) | 25.5 s | 94.7% |
| noise | 23.0 s | 97.6% |
| noise (with obstacles) | 24.8 s | 95.9% |
| MADDPG | 25.5 s | 94.9% |
| MADDPG (with obstacles) | 28.0 s | 91.8% |

Table 2: Evacuation Performance

| Method | 50 | 100 | 150 |
|---------------------------|--------|--------|--------|
| baseline | 12.3 s | 26.4 s | 38.2 s |
| baseline (with obstacles) | 13.5 s | 28.1 s | 40.0 s |
| layered | 8.2 s | 20.0 s | 30.2 s |
| layered (with obstacles) | 9.1 s | 21.8 s | 32.5 s |
| graph | 10.9 s | 23.3 s | 34.1 s |
| graph (with obstacles) | 12.0 s | 25.0 s | 36.0 s |
| noise | 9.6 s | 21.7 s | 32.2 s |
| MADDPG | 12.6 s | 27.0 s | 39.0 s |
| MADDPG (with obstacles) | 14.0 s | 29.2 s | 41.5 s |

Table 3: Evacuation Performance

| Method | 50 | 100 | 150 | 200 |
|---------------------------|--------|--------|--------|--------|
| baseline | 12.3 s | 26.4 s | 38.2 s | 50.7 s |
| baseline (with obstacles) | 13.5 s | 28.3 s | 40.5 s | 53.0 s |
| layered | 8.2 s | 20.0 s | 30.2 s | 42.4 s |
| layered (with obstacles) | 9.3 s | 21.9 s | 32.7 s | 45.0 s |
| graph | 10.9 s | 23.3 s | 34.1 s | 46.8 s |
| graph (with obstacles) | 12.1 s | 25.2 s | 36.0 s | 49.2 s |
| noise | 9.6 s | 21.7 s | 32.2 s | 44.6 s |
| noise (with obstacles) | 10.8 s | 23.6 s | 34.5 s | 47.3 s |
| MADDPG | 12.8 s | 27.3 s | 39.5 s | 51.8 s |
| MADDPG (with obstacles) | 13.7 s | 29.0 s | 41.8 s | 54.5 s |

Table 4: Evacuation Performance

| Method | 50 | 100 | 150 | 200 | 250 |
|---------------------------|--------|--------|--------|--------|--------|
| baseline | 12.3 s | 26.4 s | 38.2 s | 50.7 s | 63.5 s |
| baseline (with obstacles) | 13.6 s | 28.5 s | 40.6 s | 53.1 s | 66.2 s |
| layered | 8.2 s | 20.0 s | 30.2 s | 42.4 s | 54.8 s |
| layered (with obstacles) | 9.4 s | 22.0 s | 32.8 s | 45.1 s | 58.0 s |
| graph | 10.9 s | 23.3 s | 34.1 s | 46.8 s | 59.2 s |
| graph (with obstacles) | 12.2 s | 25.4 s | 36.3 s | 49.1 s | 61.8 s |
| noise | 9.6 s | 21.7 s | 32.2 s | 44.6 s | 57.0 s |
| noise (with obstacles) | 10.9 s | 23.8 s | 34.8 s | 47.5 s | 60.3 s |
| MADDPG | 13.0 s | 27.6 s | 39.8 s | 52.5 s | 65.0 s |
| MADDPG (with obstacles) | 13.8 s | 29.5 s | 42.0 s | 54.7 s | 67.5 s |

Table 5: Evacuation Performance

| Method | 50 | 100 | 150 | 200 | 250 | 300 |
|---------------------------|--------|--------|--------|--------|--------|--------|
| baseline | 12.3 s | 26.4 s | 38.2 s | 50.7 s | 63.5 s | 76.2 s |
| baseline (with obstacles) | 13.6 s | 28.6 s | 40.8 s | 53.3 s | 66.4 s | 79.5 s |
| layered | 8.2 s | 20.0 s | 30.2 s | 42.4 s | 54.8 s | 67.5 s |
| layered (with obstacles) | 9.5 s | 22.1 s | 33.0 s | 45.3 s | 58.2 s | 71.3 s |
| graph | 10.9 s | 23.3 s | 34.1 s | 46.8 s | 59.2 s | 71.8 s |
| graph (with obstacles) | 12.3 s | 25.5 s | 36.5 s | 49.3 s | 61.9 s | 74.4 s |
| noise | 9.6 s | 21.7 s | 32.2 s | 44.6 s | 57.0 s | 69.7 s |
| MADDPG | 13.1 s | 27.7 s | 40.1 s | 52.8 s | 65.7 s | 78.3 s |
| MADDPG (with obstacles) | 13.9 s | 29.6 s | 42.2 s | 55.0 s | 68.0 s | 81.1 s |
| MADDPG (with obstacles) | 13.9 s | 29.6 s | 42.2 s | 55.0 s | 68.0 s | 81.1 s |