



Figure 1: Grid View

Weekly report

1 My Objectives this week

- Adding a S shape and obstacle, Grid view of the surface.
- implement brushfire Algorithm
- shape the paper in new format

2 My Accomplishments this week

2.1 Auto Control

- Grid View
- Implementing Brushfire Algorithm

My problem with brushfire algorithm is that I didn't understand how it works completely. I modified it a little bit by this algorithm:

- I first of all, give a default value of infinity to obstacles, and give zero to all the spaces. I give one to the goal, and run the algorithm.
- every node neighboring goal with get value of the goal + 1
- every node neighboring their neighbors get the least value of their neighbors + 1
- I don't count 0 as a number.

I run this algorithm until it reaches the start position. But it has some difficulties, because we can not reach the goal always, because of the standard deviation. we should expect that we have reached the goal, if we are as near as doubled standard deviation to it.

- Reshaping Paper

3 **My *Plan* for next week**

- Complete the algorithm: 1. Going to static obstacles if the variance was less than something, and going behind the object to push it otherwise.
- write the Lyapunov's proof for the controlling variance.

3.1 **Meeting with Dr. Becker On Tuesday, 12 pm**

- To see if my algorithm work
- Show him results.