

## Appendices:

### A.1. Code for Q1.2.2

```
1. import numpy as np
2. import matplotlib.pyplot as plt
3. from mpl_toolkits.mplot3d import Axes3D
4. from matplotlib.tri import Triangulation
5.
6. W = 100
7. a = 2
8. n = 2
9. delta1 = 0.1
10. delta2 = 0.2
11.
12. b = np.linspace(0, 5, num=51)
13. d = np.linspace(0, 5, num=51)
14.
15. B, D = np.meshgrid(b, d)
16.
17. mmp = (6.895 * W)/(n * a * pow(B,0.8) * pow(D,0.8) * pow(delta2,0.4))
18.
19. tri = Triangulation(B.ravel(), D.ravel())
20.
21. fig = plt.figure(figsize=(5, 5))
22. ax = fig.add_subplot(111, projection='3d')
23.
24. ax.plot_trisurf(tri, mmp.ravel(), cmap='cool', edgecolor='none', alpha=0.8)
25.
26. ax.set_title('MMP metric as a function of d and (delta=0.2)', fontsize=14)
27. ax.set_xlabel('b', fontsize=12)
28. ax.set_ylabel('d', fontsize=12)
29. ax.set_zlabel('MMP', fontsize=12)
30.
31. plt.show()
32.
```