**MF850: Advanced Computational Methods**

**Problem Set 2**

**Problem 2.1**

1. Here’s the brief view of the result vectors (Using N=1000):

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1. According to the definition:

图片包含 文本

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The order of the convergence should be about 0.7, which is close to 1. It’s a linear convergence, to be specific, a sublinear convergence.

1. Here’s the plot of the error, using N=1000.

图表

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From the plot we can see the error is sublinear, we can say it’s a (sub)linear convergence.

1. With Robin boundary condition, I got the result shown below:

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It’s close to the analytical solution as well.

**Problem 2.2**

The surface plot is shown below:

图表, 表面图

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From the solution, v(-0.5,0) is about -0.62