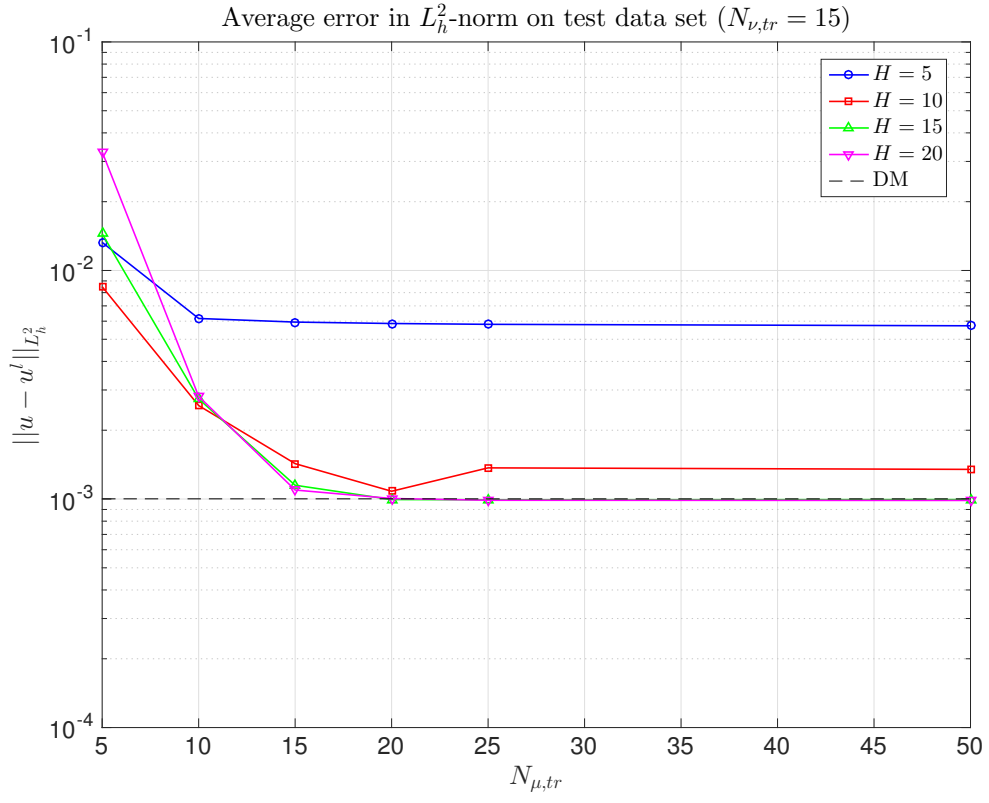**Figure 1**
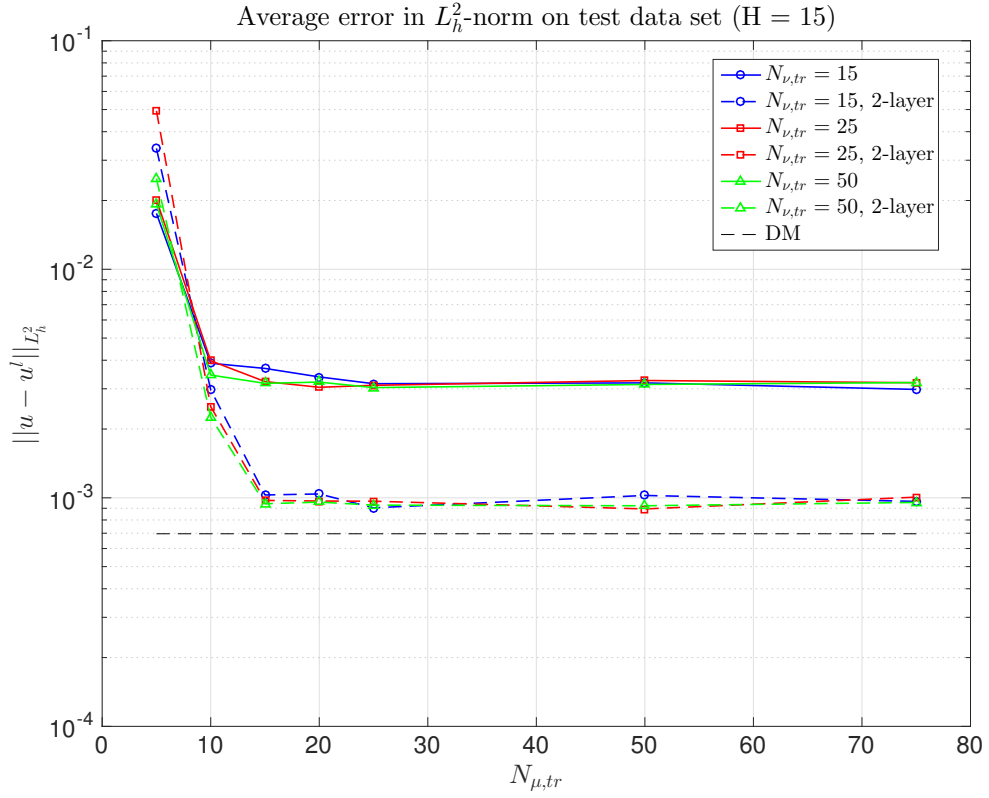

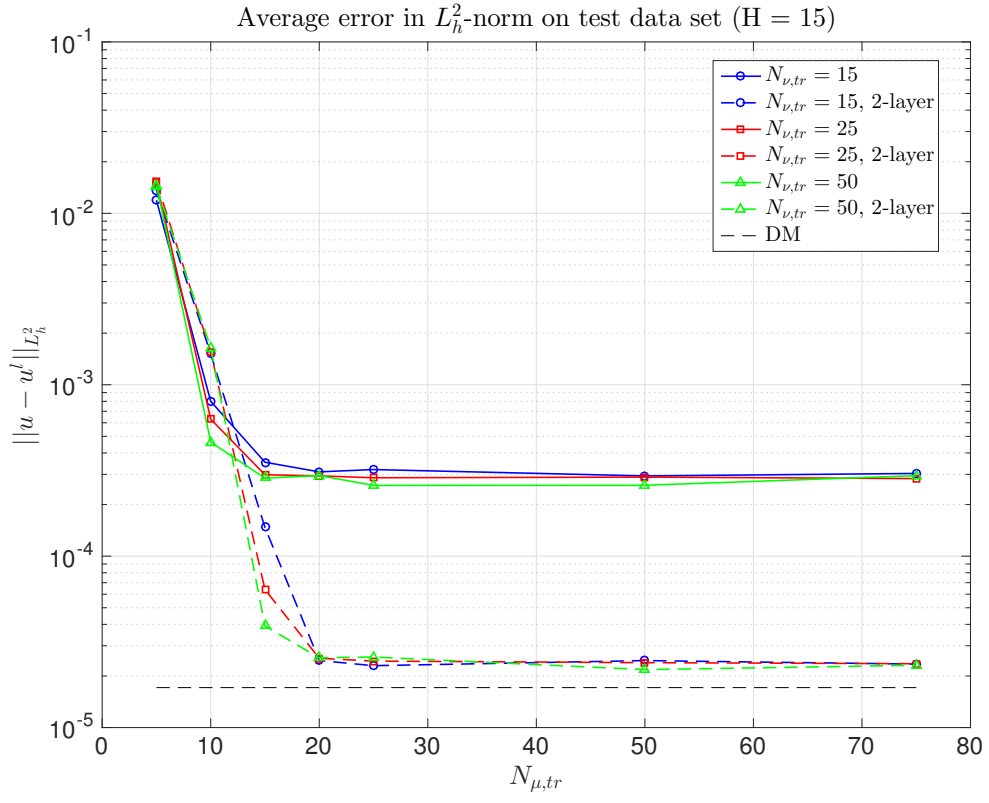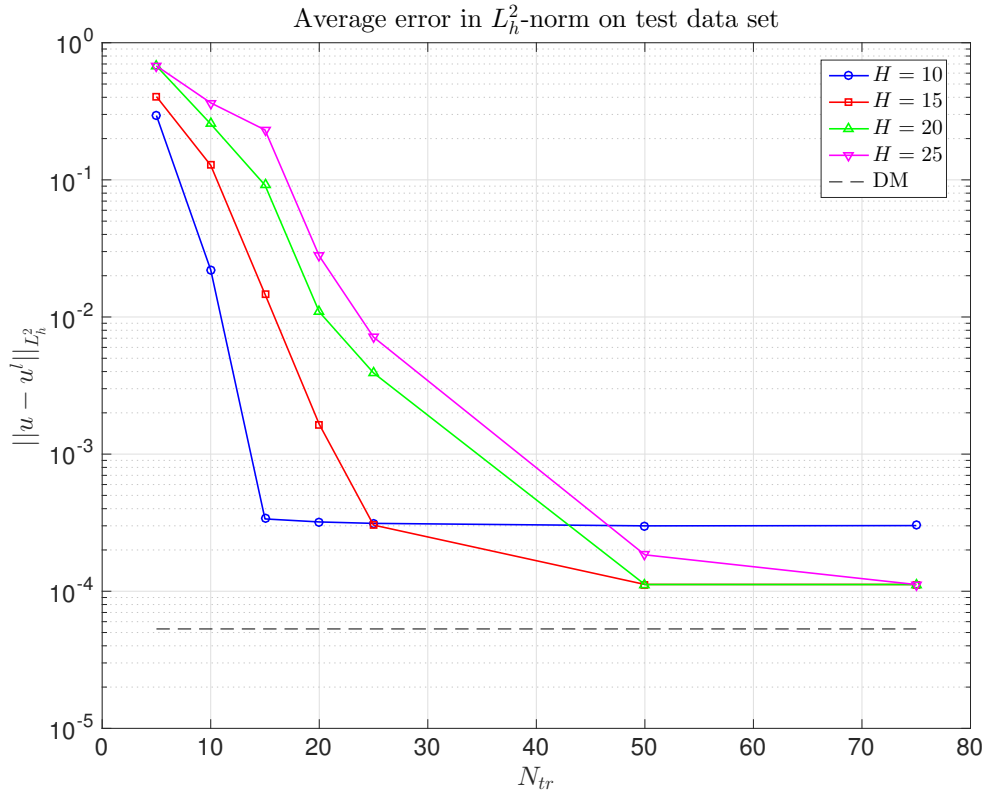**Figure 2**

1

Figure 3

Figure 4

Figure 5

Figure 6

Full and reduced solution to Poisson equation ($K = 100$, $N_\mu = 50$, $N_\nu = 50$, $L = 25$)

Figure 7
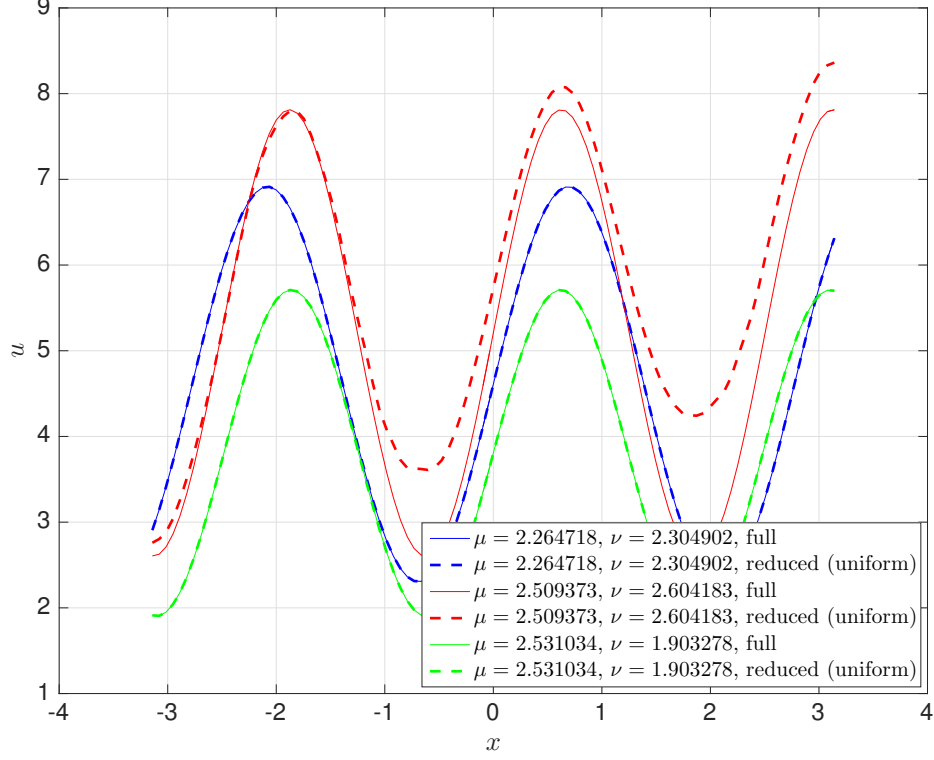
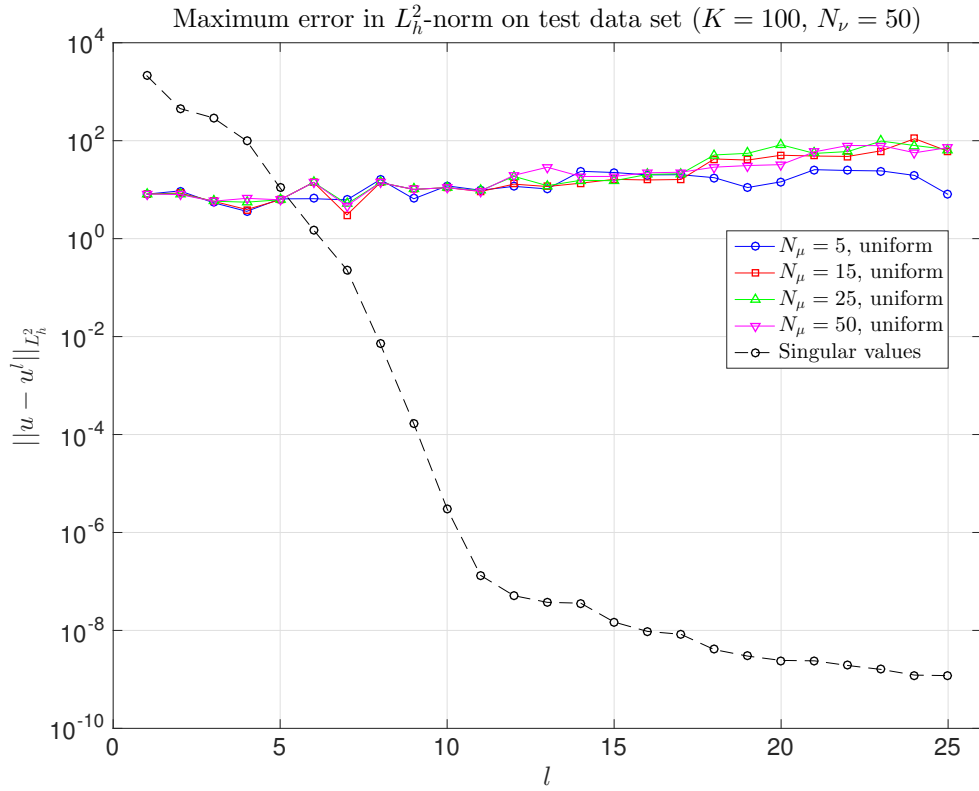Maximum error in L_h^2-norm on test data set ($K = 100$, $N_\nu = 50$)
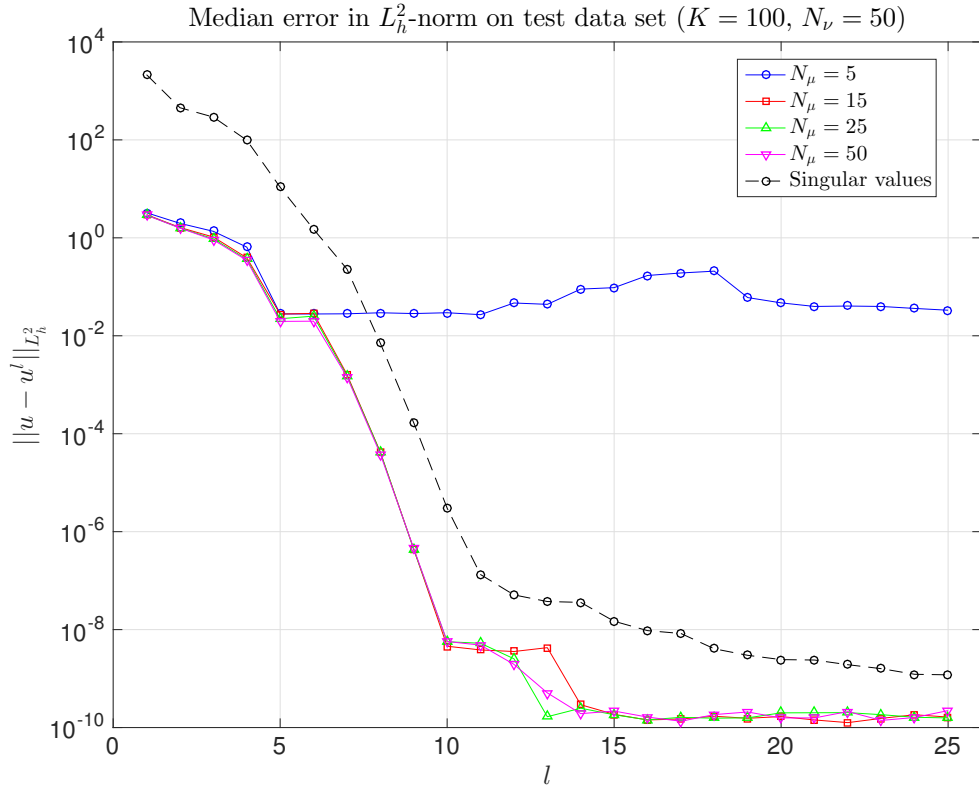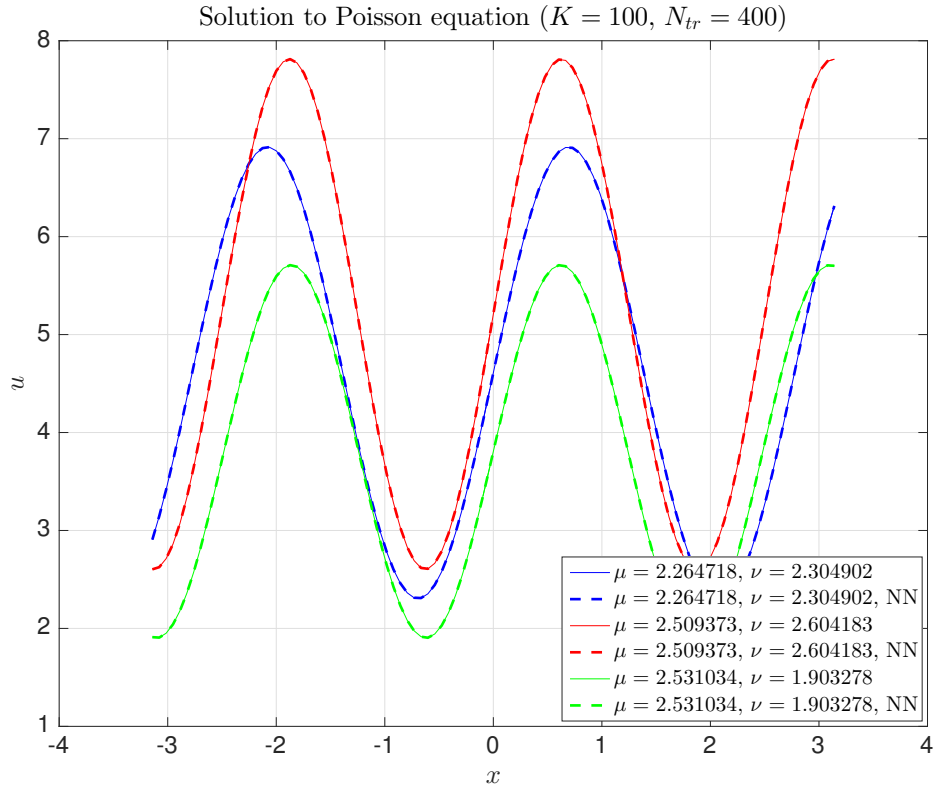

Figure 8

Figure 9

Figure 10

5

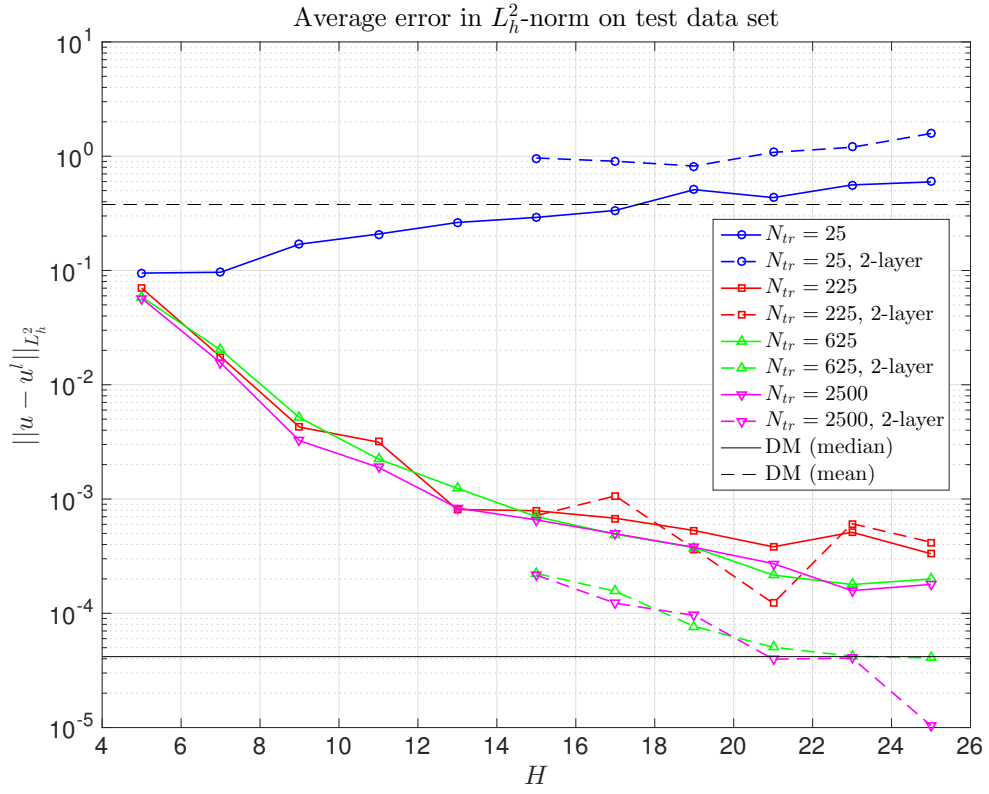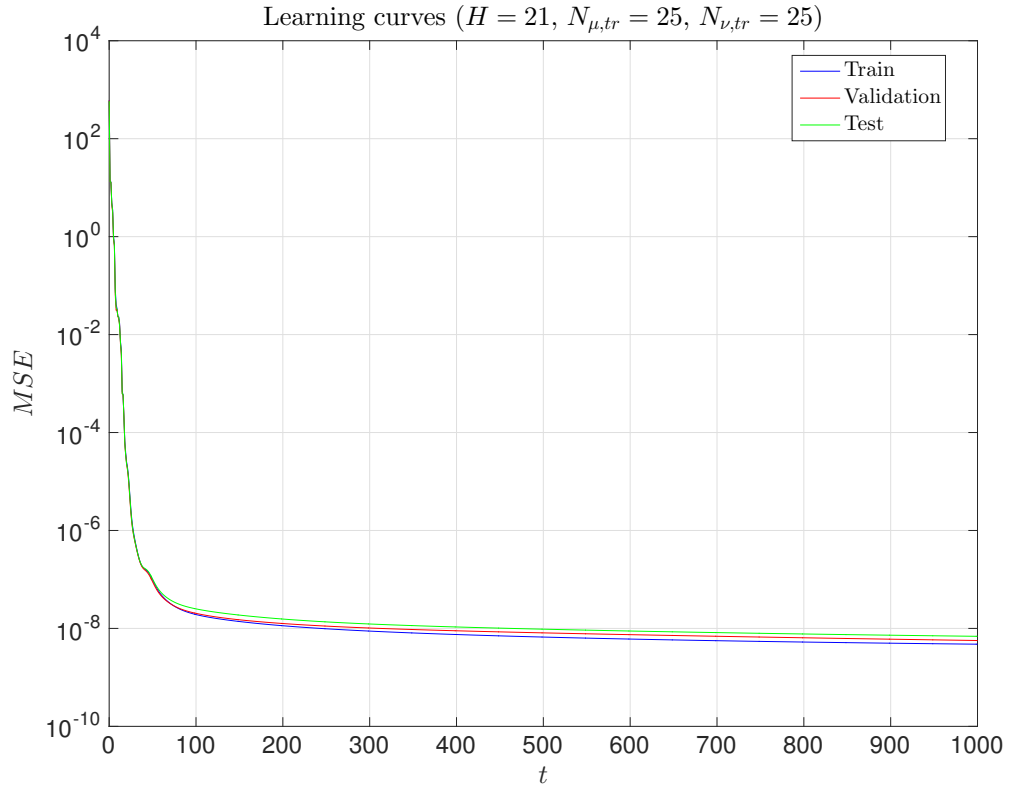Figure 11

Figure 12

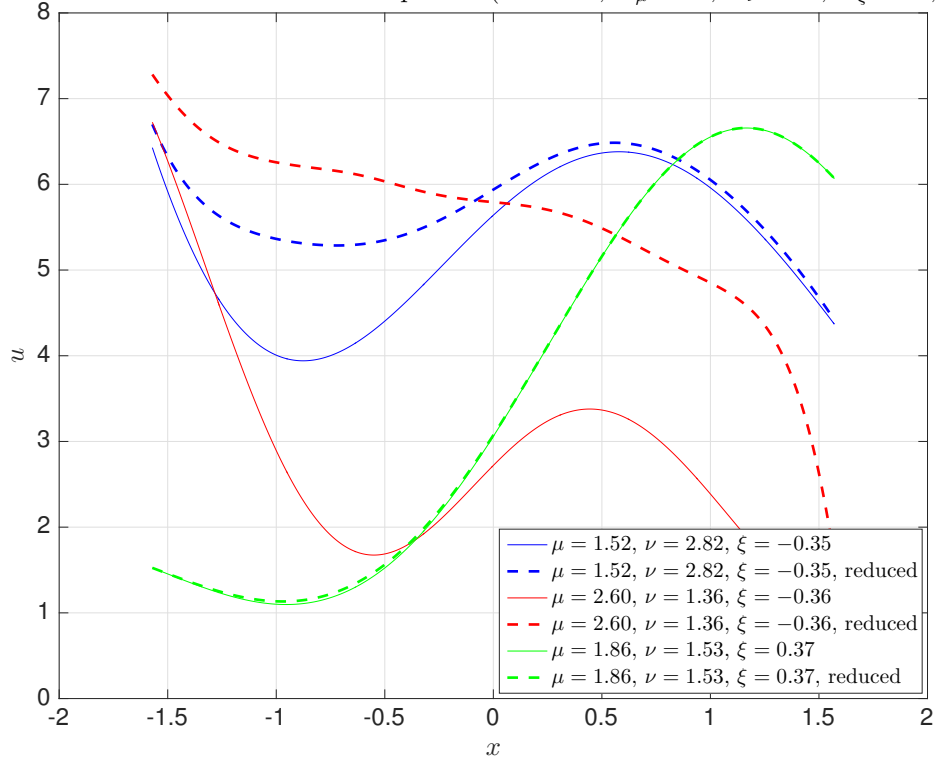Full and reduced solution to Poisson equation ($K = 500$, $N_\mu = 10$, $N_\nu = 10$, $N_\xi = 10$, $L = 10$)

Legend:
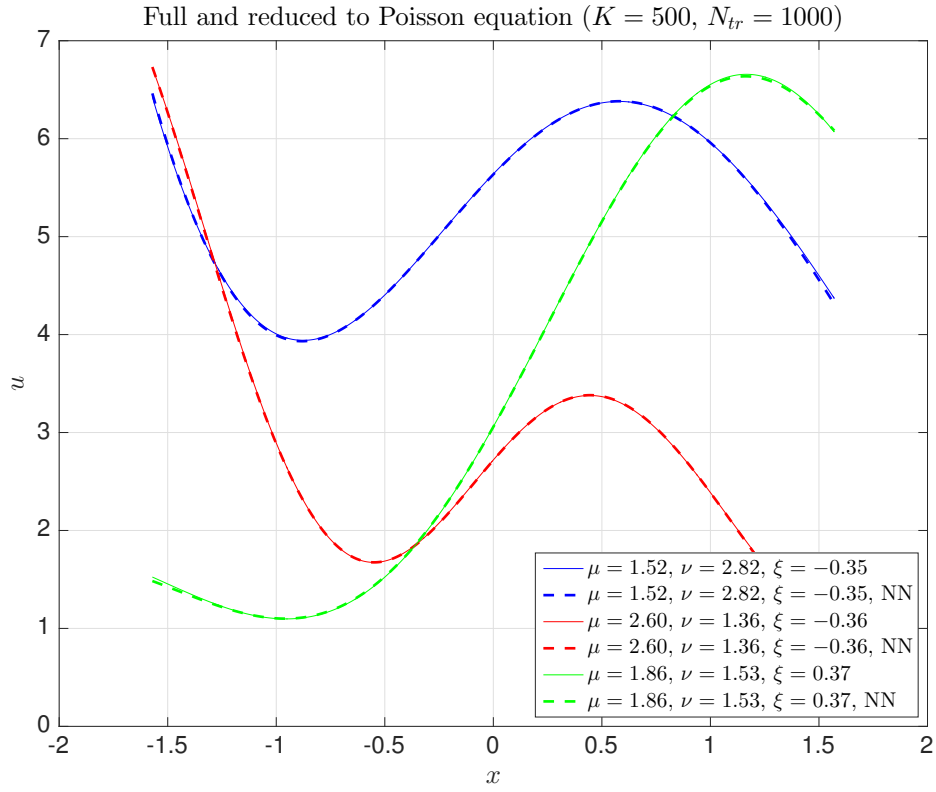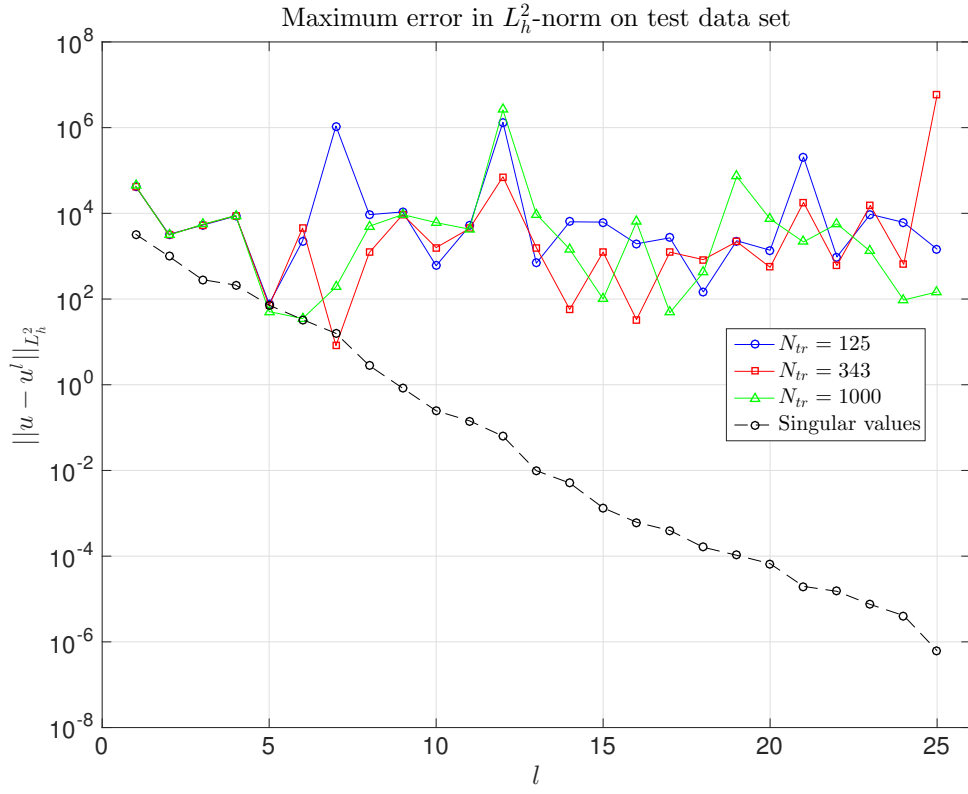- $\mu = 1.52$, $\nu = 2.82$, $\xi = -0.35$
- $\mu = 1.52$, $\nu = 2.82$, $\xi = -0.35$, reduced
- $\mu = 2.60$, $\nu = 1.36$, $\xi = -0.36$
- $\mu = 2.60$, $\nu = 1.36$, $\xi = -0.36$, reduced
- $\mu = 1.86$, $\nu = 1.53$, $\xi = 0.37$
- $\mu = 1.86$, $\nu = 1.53$, $\xi = 0.37$, reduced

Figure 13

Full and reduced to Poisson equation ($K = 500$, $N_{tr} = 1000$)

Legend:
- $\mu = 1.52$, $\nu = 2.82$, $\xi = -0.35$
- $\mu = 1.52$, $\nu = 2.82$, $\xi = -0.35$, NN
- $\mu = 2.60$, $\nu = 1.36$, $\xi = -0.36$
- $\mu = 2.60$, $\nu = 1.36$, $\xi = -0.36$, NN
- $\mu = 1.86$, $\nu = 1.53$, $\xi = 0.37$
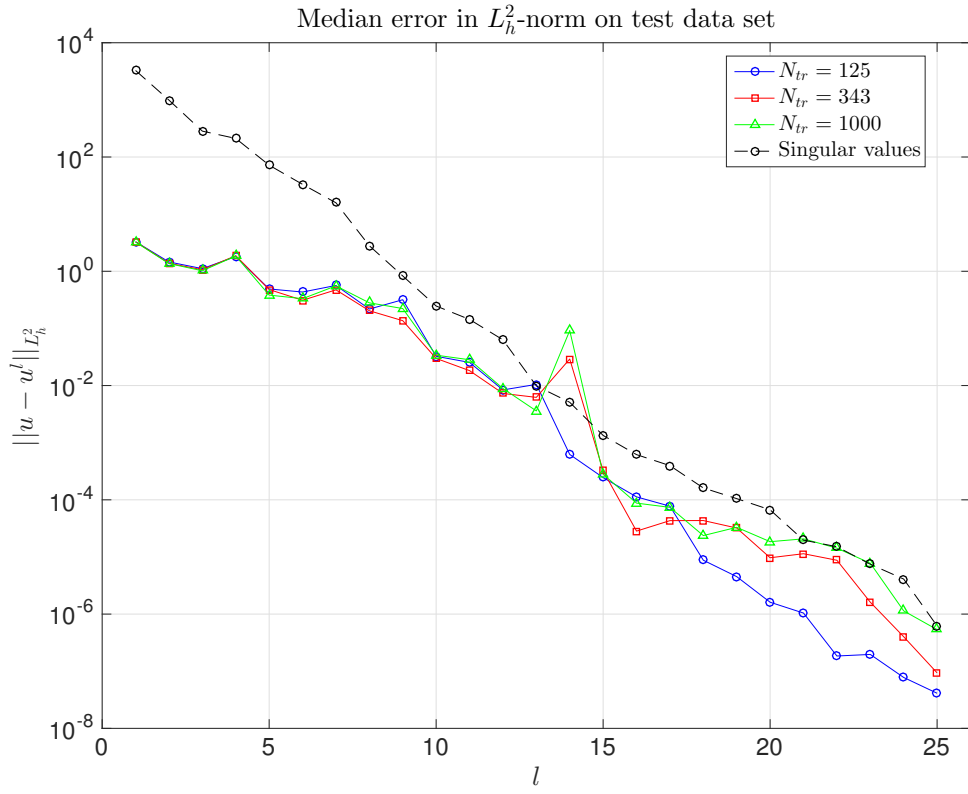- $\mu = 1.86$, $\nu = 1.53$, $\xi = 0.37$, NN

Figure 14

Figure 15

Figure 16

8

Figure 17

Figure 18