

均匀剖分

K=0

	L2 order	L2 error	L1 order	L1 error	L infinite order	L infinite error
20		1.12E+00		2.52E+00		6.39E-01
40	0.689	6.94E-01	0.686	1.57E+00	0.682	3.98E-01
80	0.834	3.90E-01	0.834	8.79E-01	0.839	2.22E-01
160	0.914	2.07E-01	0.914	4.66E-01	0.917	1.18E-01
320	0.957	1.07E-01	0.957	2.40E-01	0.958	6.07E-02

K=1

	L2 order	L2 error	L1 order	L1 error	L infinite order	L infinite error
20		1.17E-02	0.000	2.42E-02		1.32E-02
40	2.098	2.73E-03	2.230	5.15E-03	1.828	3.73E-03
80	2.028	6.70E-04	2.136	1.17E-03	1.925	9.81E-04
160	2.007	1.67E-04	2.074	2.78E-04	1.965	2.51E-04
320	2.002	4.16E-05	2.039	6.77E-05	1.983	6.35E-05

K=2

	L2 order	L2 error	L1 order	L1 error	L infinite order	L infinite error
20		2.96E-04		6.23E-04		5.11E-04
40	3.107	3.44E-05	3.207	6.74E-05	2.988	6.44E-05
80	3.028	4.22E-06	3.080	7.97E-06	2.997	8.07E-06
160	3.007	5.25E-07	3.027	9.79E-07	2.999	1.01E-06
320	3.002	6.55E-08	3.008	1.22E-07	3.000	1.26E-07

随机剖分

K=0

	L2 order	L2 error	L1 order	L1 error	L infinite order	L infinite error
20		1.12E+00		2.52E+00		6.39E-01
40	0.690	6.94E-01	0.687	1.57E+00	0.683	3.98E-01
80	0.838	3.90E-01	0.839	8.79E-01	0.843	2.23E-01
160	0.913	2.07E-01	0.913	4.66E-01	0.917	1.18E-01
320	0.959	1.07E-01	0.959	2.40E-01	0.960	6.07E-02

K=1

	L2 order	L2 error	L1 order	L1 error	L infinite order	L infinite error
20		1.17E-02		2.42E-02		1.34E-02
40	2.091	2.73E-03	2.222	5.16E-03	1.817	3.79E-03
80	2.033	6.70E-04	2.142	1.17E-03	1.922	1.00E-03
160	2.012	1.67E-04	2.079	2.78E-04	1.976	2.56E-04
320	2.005	4.16E-05	2.043	6.77E-05	1.982	6.49E-05

K=2

	L2 order	L2 error	L1 order	L1 error	L infinite order	L infinite error
20		2.98E-04		6.28E-04		5.24E-04
40	3.125	3.45E-05	3.226	6.79E-05	3.009	6.57E-05
80	3.043	4.22E-06	3.097	8.00E-06	3.012	8.21E-06
160	3.004	5.25E-07	3.024	9.80E-07	2.975	1.04E-06
320	3.008	6.55E-08	3.015	1.22E-07	2.999	1.31E-07

以下图片均为随机剖分下产生

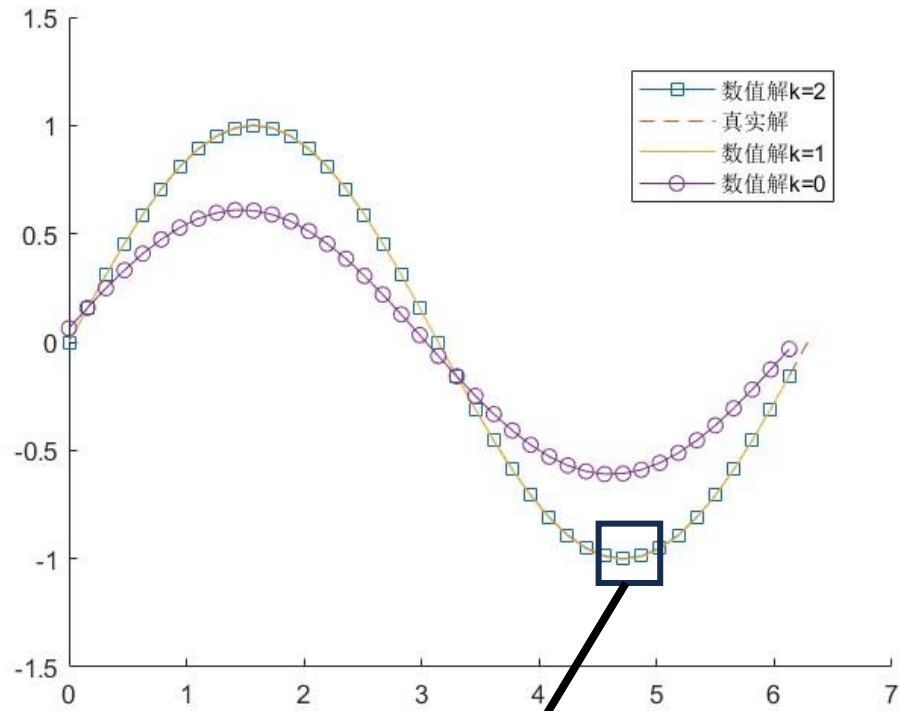


Figure 1 网格数为 40 时，不同空间阶 ($k=0,1,2$) 的模拟结果

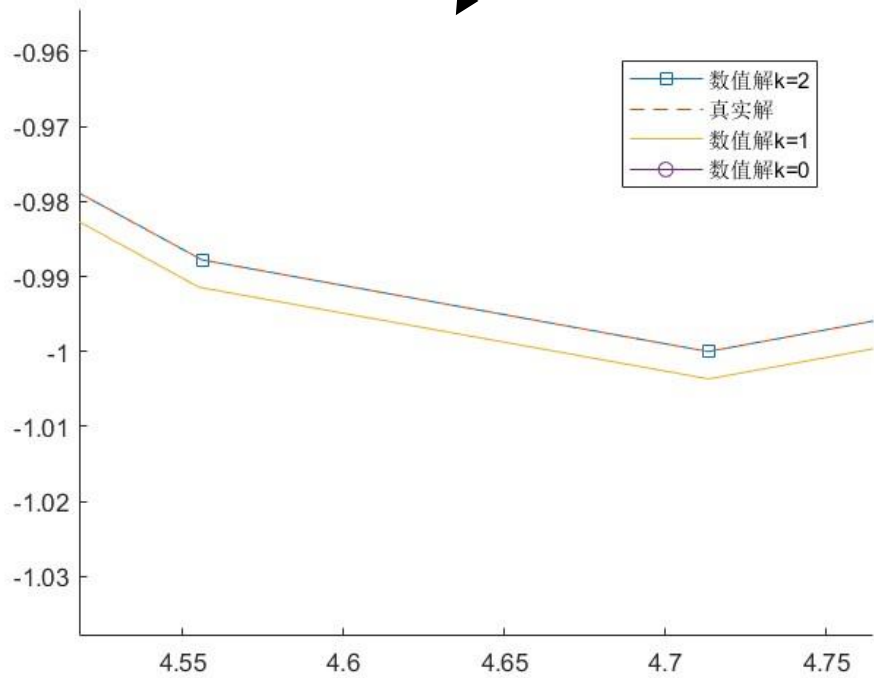


Figure 2 图一的局部放大结果，用来比较 $k=1$ 和 $k=2$

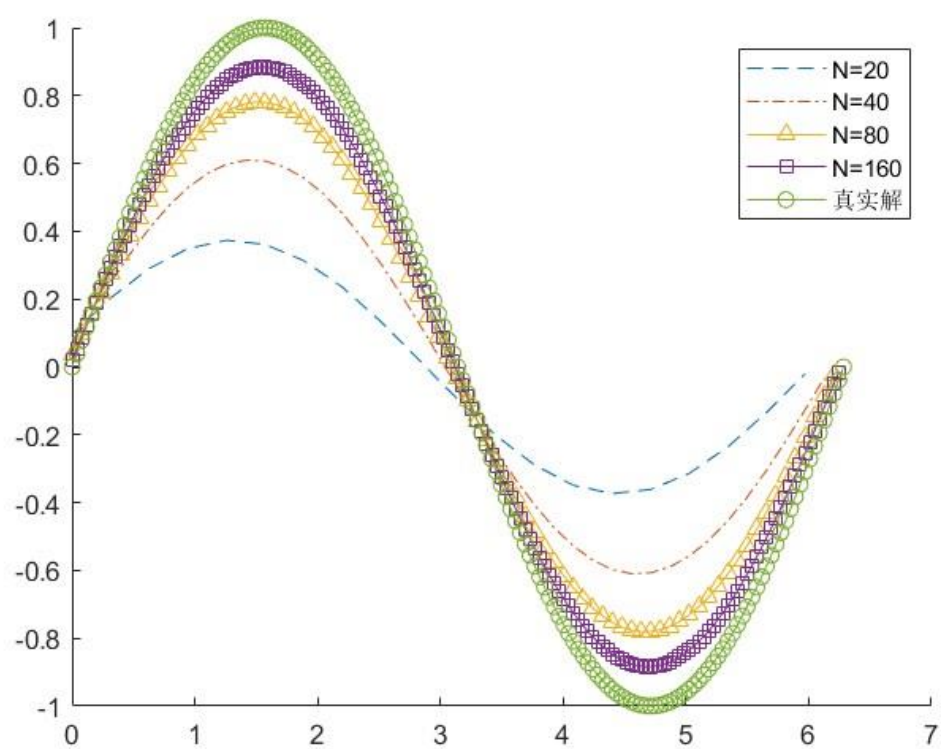


Figure 3 $K=0$ 时不同剖分数($N=20,40,80,160$)的对比

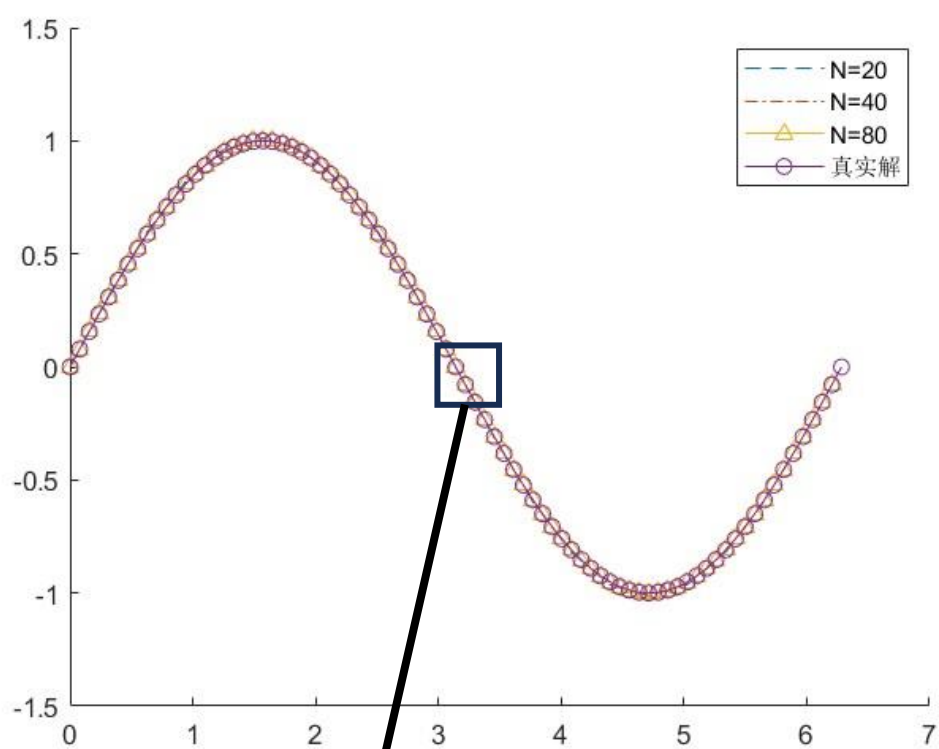


Figure 4 $K=1$ 对不同剖分数($N=20,40,80$)的对比

