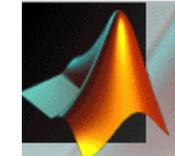


Bemerkung 3.11: Konsistenz und Konvergenz

Beispiel

$$-\Delta u(x, y) = 5\pi^2 \sin \pi x \sin 2\pi y,$$

homogene Dirichlet-Randbedingungen



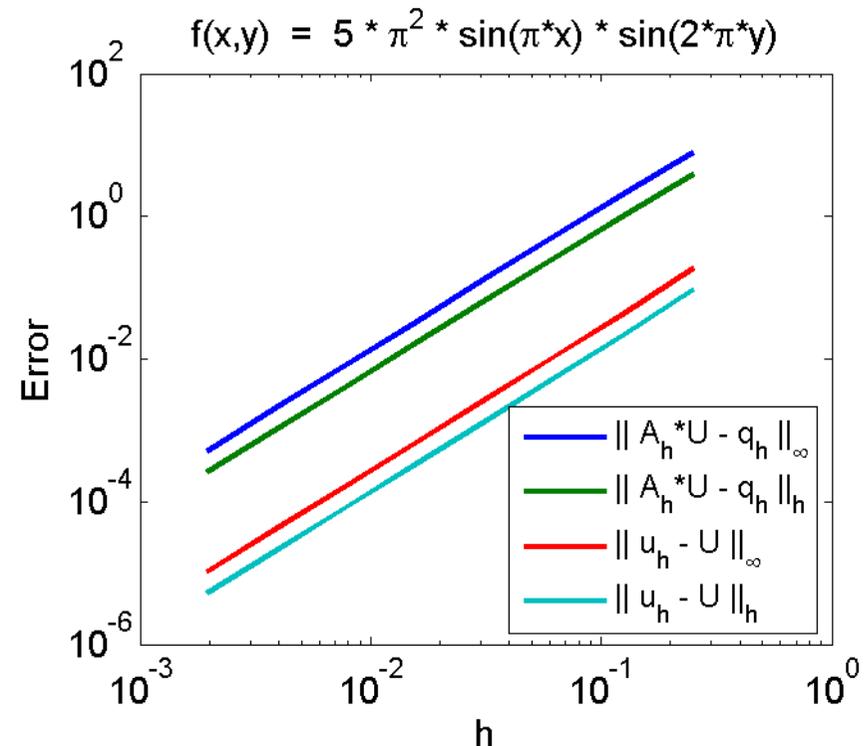
see
[plotfdm.m](#)
[fdmerr.m](#)

Konsistenz

h	$\ A_h \underline{U} - q_h\ _\infty$	$\ A_h \underline{U} - q_h\ _h$
2.50e-1	7.97e+0	3.98e+0
1.25e-1	2.11e+0	1.05e+0
6.25e-2	5.36e-1	2.68e-1
3.12e-2	1.34e-1	6.72e-2
1.56e-2	3.36e-2	1.68e-2
7.81e-3	8.42e-3	4.21e-3

Konvergenz

h	$\ \underline{u}_h - \underline{U}\ _\infty$	$\ \underline{u}_h - \underline{U}\ _h$
2.50e-1	1.92e-1	9.63e-2
1.25e-1	4.47e-2	2.23e-2
6.25e-2	1.09e-2	5.49e-3
3.12e-2	2.73e-3	1.36e-3
1.56e-2	6.82e-4	3.41e-4
7.81e-3	1.70e-4	8.53e-5

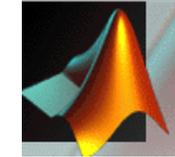


Bemerkung 3.11: Konsistenz und Konvergenz (II)

Beispiel

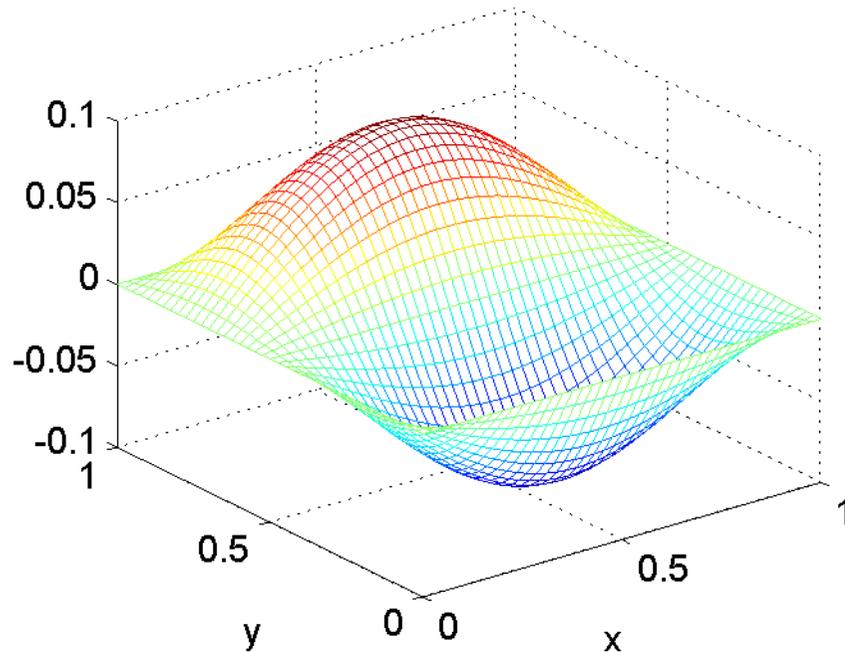
$$-\Delta u(x, y) = 5\pi^2 \sin \pi x \sin 2\pi y,$$

homogene Dirichlet-Randbedingungen



see
[plotfdm.m](#)
[fdmerr.m](#)

$h = 2.50e-002$, Konsistenz: $A_h * U - q_h$



$h = 2.50e-002$, Konvergenz: $u_h - U$

