Numerical Analysis assignment No. 6

B6TB1505 Daichi HAYASHI (Ohnishi Lab.)

November 17, 2019

1 Von–Neumann analysis of Lax–Wendroff scheme.

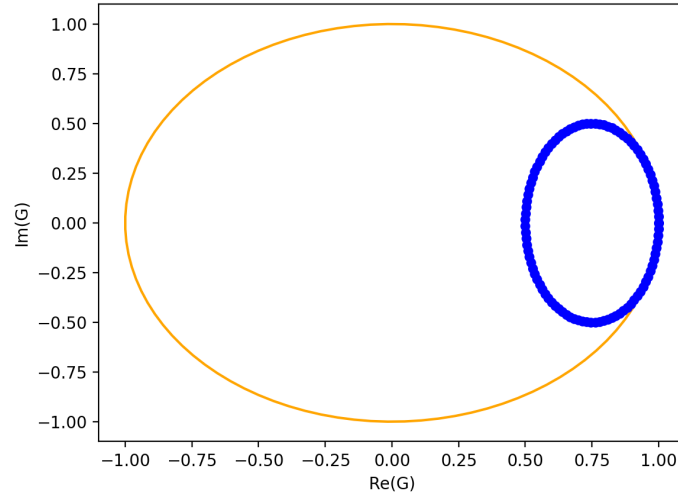The result is shown below as Figure 1–3.

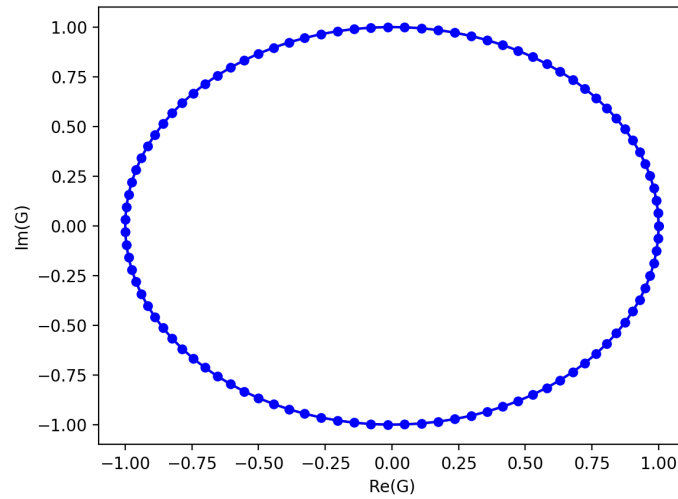Figure 1 Von–Neumann analysis with convection number = 0.5.

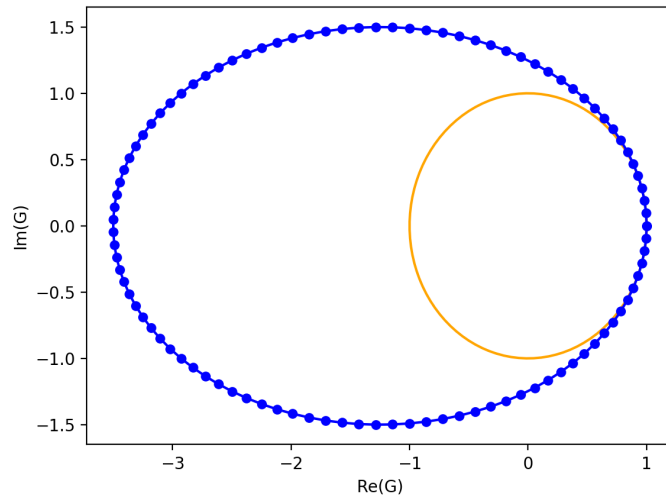Figure 2 Von–Neumann analysis with convection number = 1.0.

Figure 3 Von–Neumann analysis with convection number = 1.5.

2 Time variation of convection with Lax–Wendroff scheme.

I set convection number $c = 0.5$, mode number (number of waves) $m = 5$. The results are shown below as Figure 4–6.
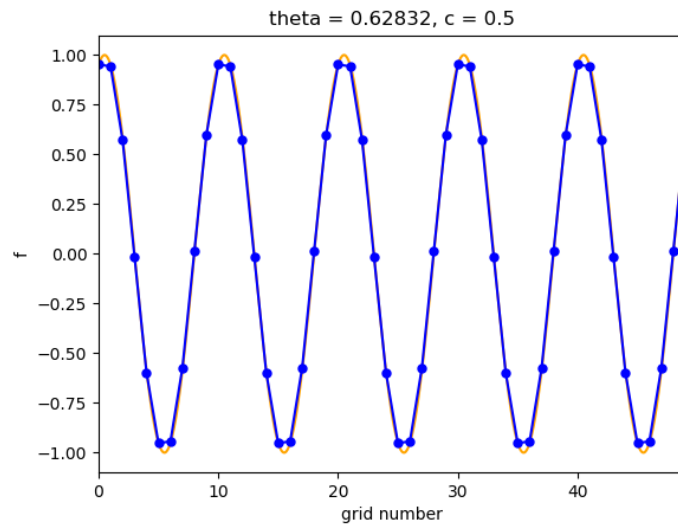

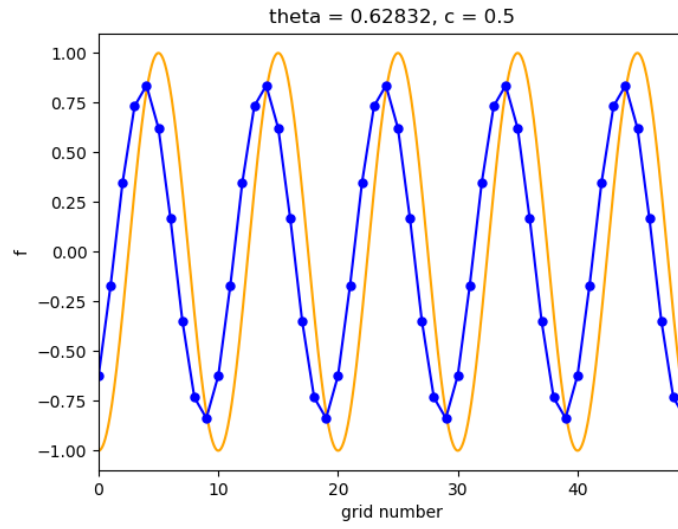Figure 4 Lax–Wendroff time variation (iteration = 1).

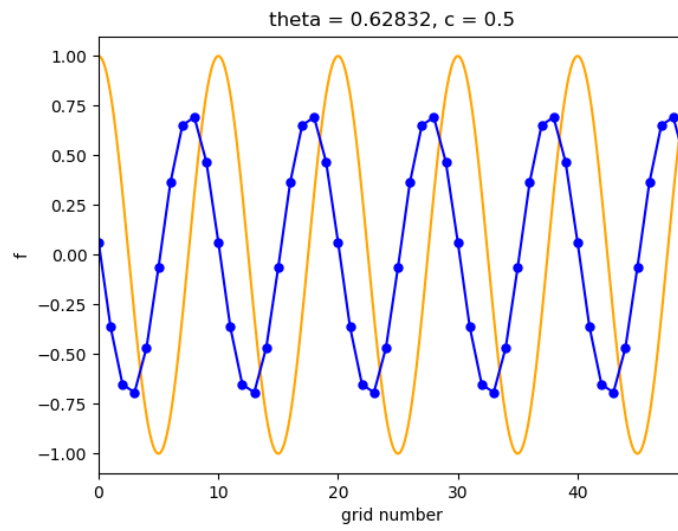Figure 5 Lax–Wendroff time variation (iteration = 50).

Figure 6 Lax–Wendroff time variation (iteration = 100).