BackwardEuler, $N_x = 10$, $\Delta t = 4.0 \cdot 10^{-3}$
200 Fourier addends
Mean absolute percentage error: 1.4169% (t=0.084)
Mean absolute percentage error: 0.1048% (t=0.5)

$t = 0.084$
$t = 0.500$