

18.10.23

One can (easily) show, that Heun's method has order of accuracy $p=2$.

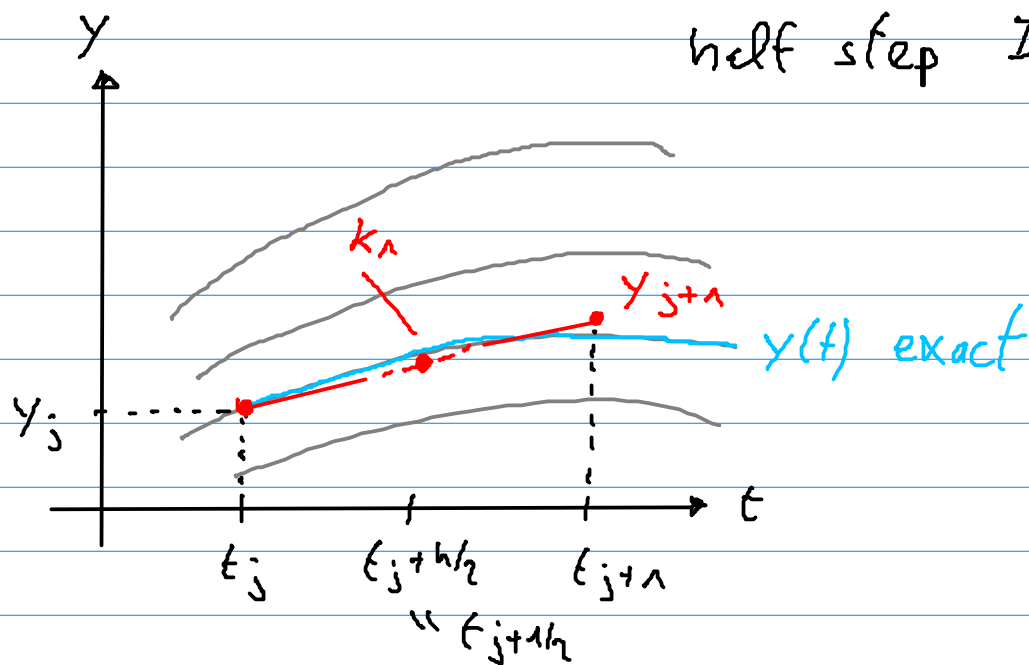
So far we have used the EE to estimate the slopes...

Let's try with IE:

$$y_{j+1} = y_j + h \cdot f(t_j + h/2, \tilde{y}_{j+1/2})$$

with $\tilde{y}_{j+1/2} = y_j + \frac{h}{2} \cdot f(t_j + h/2, \tilde{y}_{j+1/2})$

half step IE!



This method is known as the implicit midpoint method (IMM):

$$\underline{k_n} = f(t_j + h/2, y_j + \frac{h}{2} \underline{k_n})$$

$$y_{j+1} = y_j + h \cdot k_n$$