

Discrete-time Dynamic Systems: numerical solution, dimension 1

Time horizon

$$T := 5$$

Evolution function

$$f(x, t) := t^{\frac{1}{2}} \cdot x^2 + e^{-x}$$

Boundary condition

$$x_0 := 1$$

time counter

$$t := 0 .. T$$

Motion law

$$x_{t+1} := f(x_t, t)$$

$$x_t =$$

1
0.368
0.828
1.406
3.667
26.923

Evolution of the state variable

Evolution of the system

