

Today: ① Euler Method using 3 functions at once

What goes on when solving a differential eqn?

① Setup: call solver, parameters, ICs, post process, plotting, etc

call

② The ODE:

state  $\rightarrow$  ODE  $\rightarrow$  state

time  $\nearrow$

$$\underbrace{\dot{z} = f(t, z)}_{\text{ODE}}$$

"the rules"

any rules  
ex) a whole set of  
MATLAB commands

③ Solver  $\rightarrow$  e.g. Euler

$$z_{\text{new}} = z_{\text{now}} + \dot{z} \cdot \overbrace{(\Delta t)}^h$$

call

demo: Euler's Method on MATLAB (see posted code)