

# Learning Dynamics Equations

- Learning a PDE  $\leftarrow$  NN, parameters  $\Theta$

$$h_{t+1} = F(h_t)$$

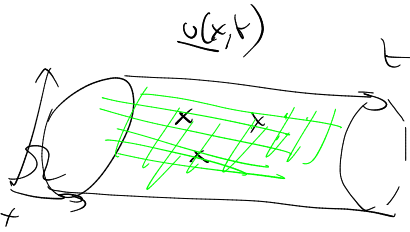
$$h_{t+1} = h_t + F(h_t) \quad \text{with } F \text{ small}$$

$\hookrightarrow$  RNN



Continuous time:  $\frac{\partial h}{\partial t} = F(h)$

DEM:



$\frac{\partial u}{\partial x, t} \in \mathbb{R}$   
 $f(x, t)$  mesh-free  
 $x: \square \rightarrow \mathbb{D} \rightarrow \cdot$