Digital shadow Time Pairs advance data/state Well pressure [MPa] Well saturation Migration 0 0 0 0 0.6 Update 0 0 0 0 networks 0 Training hase 0 0 0 0 Inference Phase **Current field** Start **Digital Twin** data injection Well pressure [MPa] 2.0 Migration Well saturation 0.6 0.5 Bayesian **Synthetic** Inference data 0/0 0 0 CO<sub>2</sub> Dynamics Current Next 0 0 0 0 0 0 state state 0 0 0 0 in silico Simulation



## Digital Twin w/ controlled injectivity