$$\Phi_{\theta,\xi}(z)_t = \mathscr{F}_d^{-1}\left(\mathscr{F}_1^{-1}(B)_t \mathscr{F}_d(z_0)\right) + \mathscr{F}_{d+1}^{-1}\left(B\mathscr{F}_{d+1}\left(\mathbf{1}_{\geq 0} H_{\theta,\xi}(z.)\right)\right)_t$$

Fixed Point Solver : $\quad z = \Phi_{\theta,\xi}(z)$

$$\left(z_0 : \mathscr{D} \rightarrow \mathbb{R}^{d_h}, \quad \xi : [0,T] \rightarrow L^2(\mathscr{D}, \mathbb{R}^{d_\xi})\right) \quad\longrightarrow\quad z : [0,T] \rightarrow L^2(\mathscr{D}, \mathbb{R}^{d_h}) \quad \textbf{Latent Space}$$

ODE Solver : $\quad z_t = \mathscr{F}_d^{-1}(v_t)$

$$v_t = v_0 + \int_0^t A v_s + \mathscr{F}_d(H_{\theta,\xi}(\mathscr{F}_d^{-1}(v_s))), \quad v_0 = \mathscr{F}_d(z_0)$$
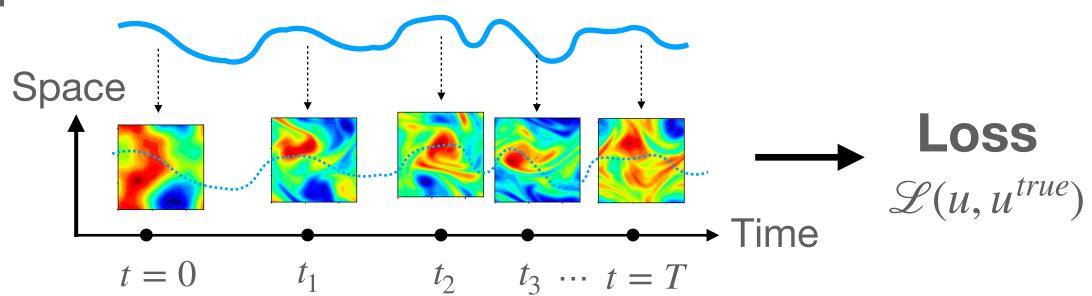
Lift $\quad L_\theta : \mathbb{R}^{d_u} \rightarrow \mathbb{R}^{d_h}$

Readout $\quad \Pi_\theta : \mathbb{R}^{d_h} \rightarrow \mathbb{R}^{d_u}$

$$\left(u_0 : \mathscr{D} \rightarrow \mathbb{R}^{d_u}, \quad \xi : [0,T] \rightarrow L^2(\mathscr{D}, \mathbb{R}^{d_\xi})\right) \quad\longrightarrow\quad u : [0,T] \rightarrow L^2(\mathscr{D}, \mathbb{R}^{d_u}) \quad \textbf{Physical Space}$$

Solution Operator

Space

$t = 0 \qquad t_1 \quad t_2 \quad t_3 \quad \cdots \quad t = T$ Time

Space

$t = 0 \qquad t_1 \quad t_2 \quad t_3 \cdots t = T$ Time

Loss

$\mathscr{L}(u, u^{true})$