$$\begin{aligned}\mu(P(x_{t+1})) &= \mathbf{F}(\mu(P(x_t))) \\ &\approxeq K\varphi(P(x_t))\end{aligned}$$

$$\begin{aligned}x_{t+1} &= \mathbf{F}(x_t, w_t) \\ &\approxeq K\varphi((x_t, w_t)\end{aligned}$$