

State Transition Matrix

Linearization of States

Example: DAB Model

- DT model is

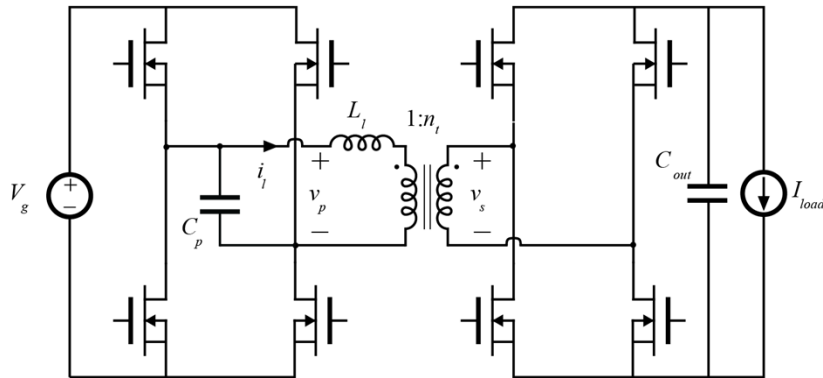
$$\hat{\mathbf{x}}[n] = \mathbf{\Phi}\hat{\mathbf{x}}[n - 1] + \mathbf{\Gamma}\hat{\varphi}_{ab}[n - 1]$$

with

$$\mathbf{\Phi} = e^{\mathbf{A}_3 t_3} e^{\mathbf{A}_2 t_2} e^{\mathbf{A}_1 t_1} \mathbf{I}_{HC}$$

$$\mathbf{\Gamma} = e^{\mathbf{A}_3 t_3} (\mathbf{A}_2 - \mathbf{A}_3) \mathbf{X}_0$$

where $\mathbf{\Phi} \in \mathbb{R}^{3 \times 3}$ and $\mathbf{\Gamma} \in \mathbb{R}^{3 \times 1}$



⊗ Sampling Instance

