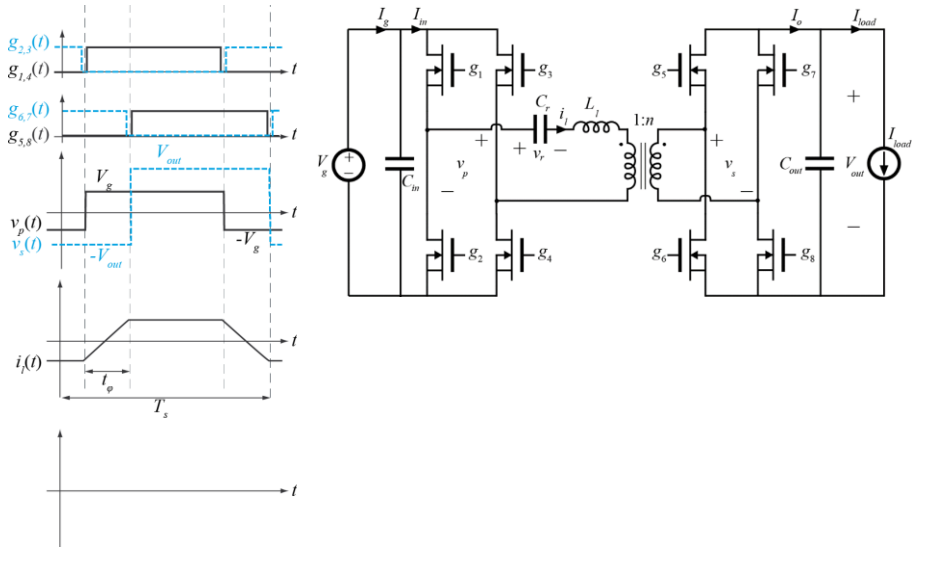




DAB: Reduced C_r



Resonant Power Conversion

Erickson and Maksimovic, Chapter 19

- Resonant inverters used in induction heating, gas-discharge lamp ballast, electrosurgical generators where sinusoidal waveforms of high peak value are needed
- Resonant DC-DC converters popular in high frequency and high voltage applications where parasitics of transformer are significant

Advantages:

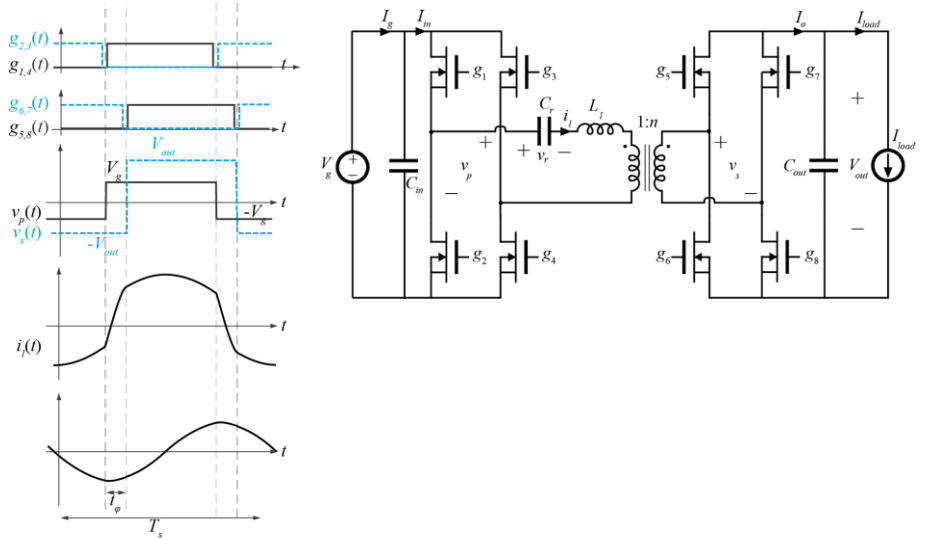
- Absorbed parasitics
- Soft-switching (ZVS or ZCS) over a wide range possible

Disadvantages:

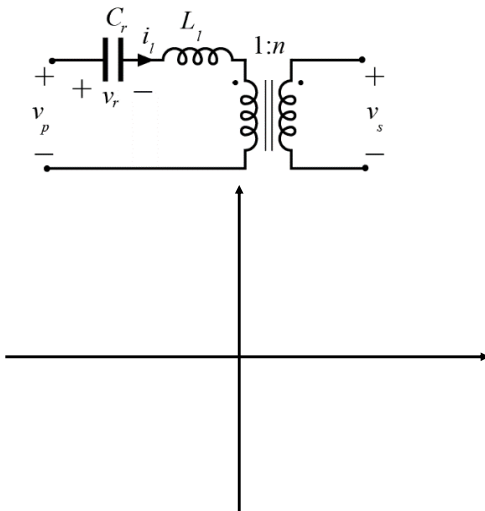
- Difficult to design resonant elements
- Control can be complex
- Higher peak current stresses
- High circulating current at light load



Series Resonant Converter

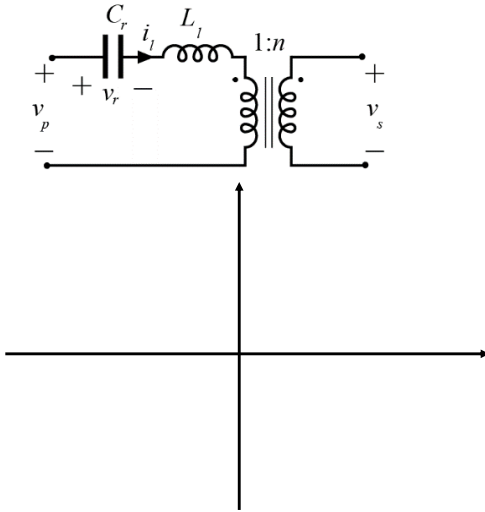


Subinterval I

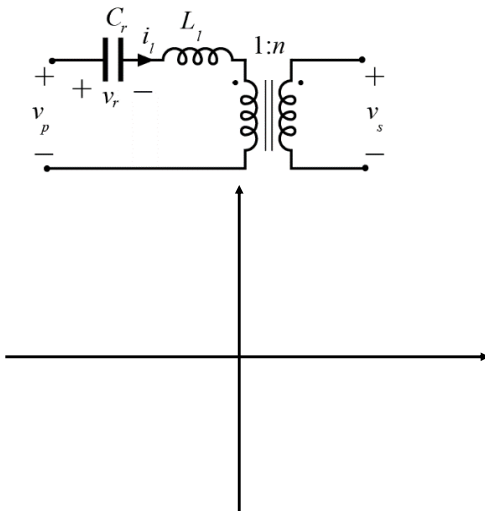




Subinterval I

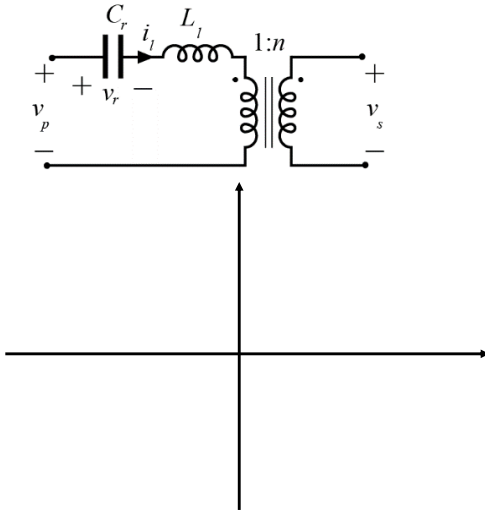


Subinterval I

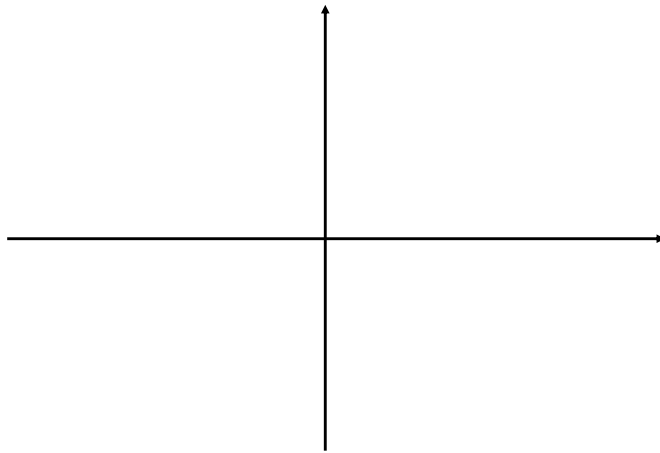




Subinterval I



Complete State Plane – Phase Shift Modulation





Averaging Step
