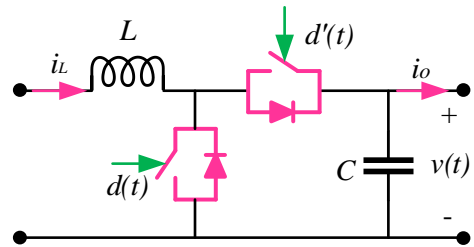




## DC Microgrids

- Battery Storage
- Automatic Master-Slave Control

## Controller Design

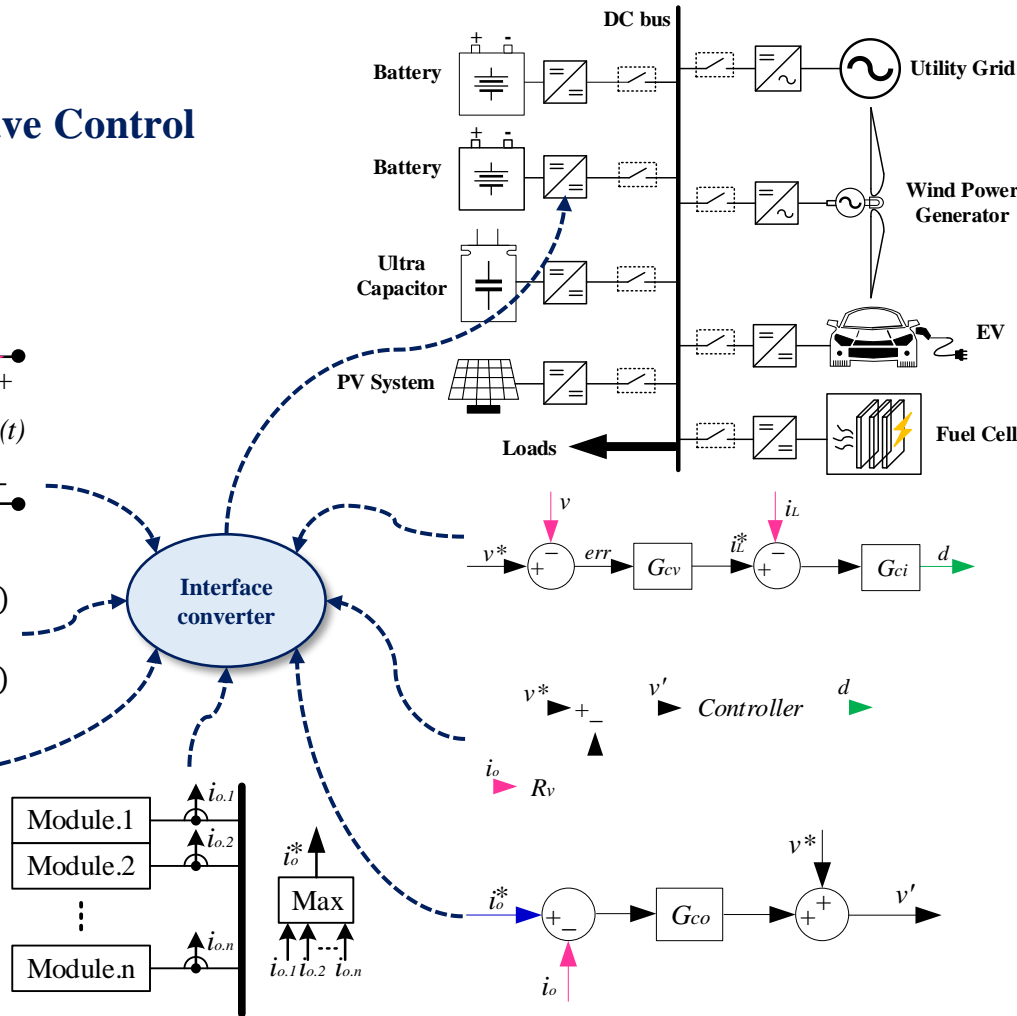


$$\begin{cases} L \frac{di_L(t)}{dt} = v_g(t) - d'(t)v_o(t) \\ C \frac{dv_o(t)}{dt} = d'(t)i_L(t) - i_o(t) \end{cases}$$

$$G_{ci} = G_{im} \cdot \left(1 + \frac{\omega_z}{s}\right)$$

$$G_{cv} = G_{vm} \cdot \left(1 + \frac{\omega_{zv}}{s}\right)$$

$$G_{co} = G_{om} \cdot \left(1 + \frac{\omega_{zo}}{s}\right)$$



## Simulations

