ECE 523, Lect 17

Two phase open sequence connections

$$Z_B = Z_C = \infty$$

- Boundary conditions in ABC domain:

$$I_b = I_c = 0$$

$$V_{aa'} = Z_A \cdot I_a$$

- Transform boundary conditions to sequence domain

   - Result for currents is similar to that for a SLG fault:

$$I_0 = I_1 = I_2 = \frac{I_a}{3}$$ • implies series connection of sequence blocks

   - voltage equation mapped to sequence domain:

$$V_{aa'0} + V_{aa'1} + V_{aa'2} = Z_A \cdot \left(I_0 + I_1 + I_2 \right)$$

- Rearrange equation grouping terms:

$$\left(V_{aa'0} - Z_A \cdot I_0 \right) + \left(V_{aa'1} - Z_A \cdot I_1 \right) + \left(V_{aa'2} - Z_A \cdot I_2 \right) = 0$$