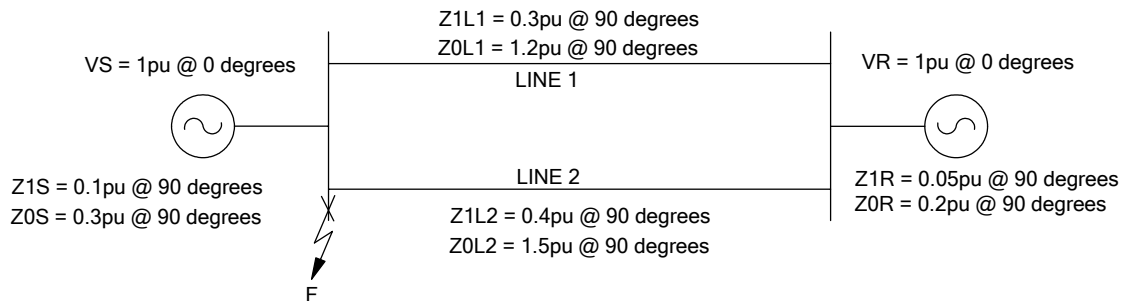


ECE 423 Homework Assignment #7

Unsymmetrical Faults

Due: Session 34 (That's Nov 12 for on campus, Nov. 26 for Engineering Outreach)

1. Textbook problem 12.3
2. Textbook problem 12.15
3. Textbook problem 12.18
4. For the following system with all quantities shown in per unit:
 - a. Develop the each of the sequence networks for a fault at location F.
 - b. Develop the sequence network connections for single-phase to ground, phase-phase to ground, phase-phase, and three-phase faults.
 - c. Determine the positive-, negative-, and zero-sequence currents and voltages at location F for a single-phase to ground fault.



5. For the system shown in 4, develop the sequence connection diagram for a single-phase open on Line 1.
6. Using the sequence diagram from problem 5, calculate the positive-, negative-, and zero-sequence currents on Line 2 with $V_R = 1 \text{ pu} @ 20 \text{ degrees}$.