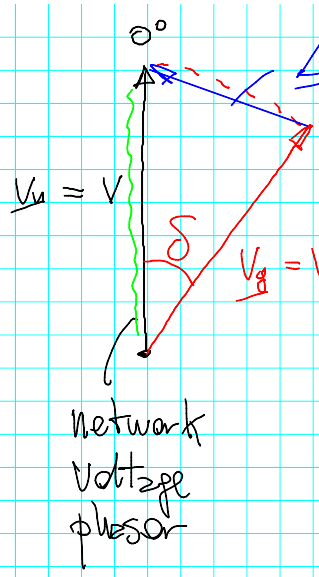
09/05/2019

LOAD FLOW (197 →)

We know how to

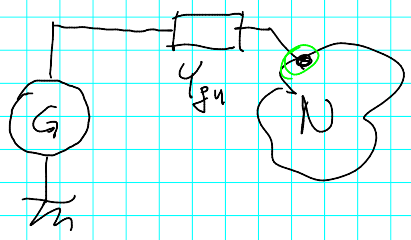
- regulate f & Power with just measurements of f (PRI + SEC)
- optimally distribute generation based on Forecasts of demand (TER)

⇒ What about the load we impose to the transmission lines? E.g., overcurrents? ⇒ L.F. problem



⇒ current from gen to network
⇒ power transfer

(in general $V_g \simeq V$)

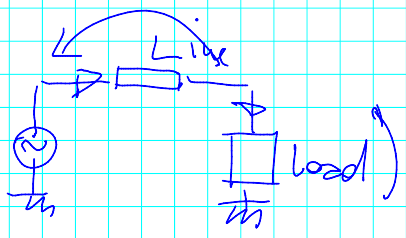


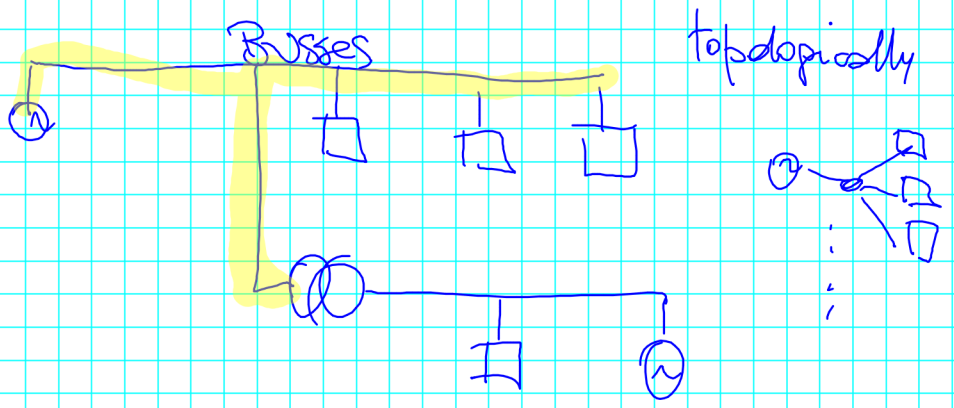
3 $Z = R + jX$

$Y = \frac{1}{Z} = \frac{R - jX}{R^2 + X^2}$

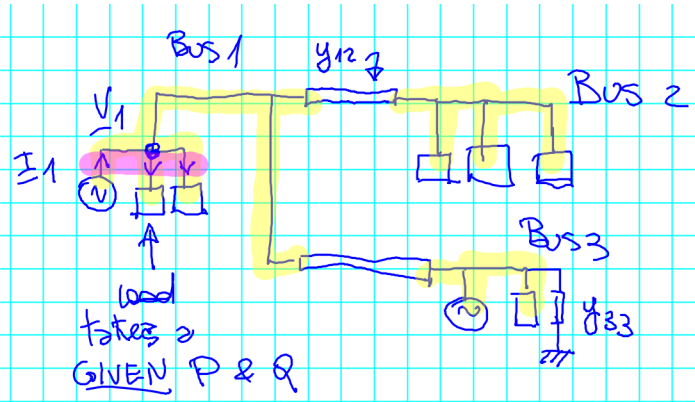
G

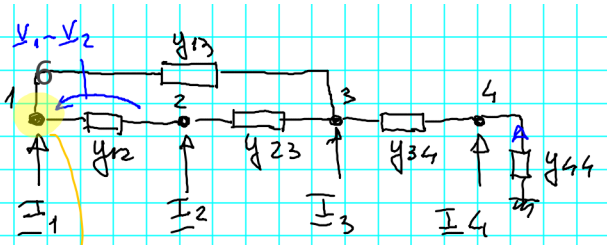
B

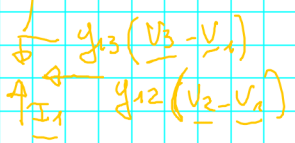



Busses
topologically

5







$$I_1 + y_{12}(V_2 - V_1) + y_{13}(V_3 - V_1) = 0$$

$$I_2 + y_{12}(V_1 - V_2) + y_{23}(V_3 - V_2) = 0$$

$$I_3 + y_{13}(V_1 - V_3) + y_{23}(V_2 - V_3) + y_{34}(V_4 - V_3) = 0$$

$$I_4 + y_{34}(V_3 - V_4) + y_{44} V_4 = 0$$

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