

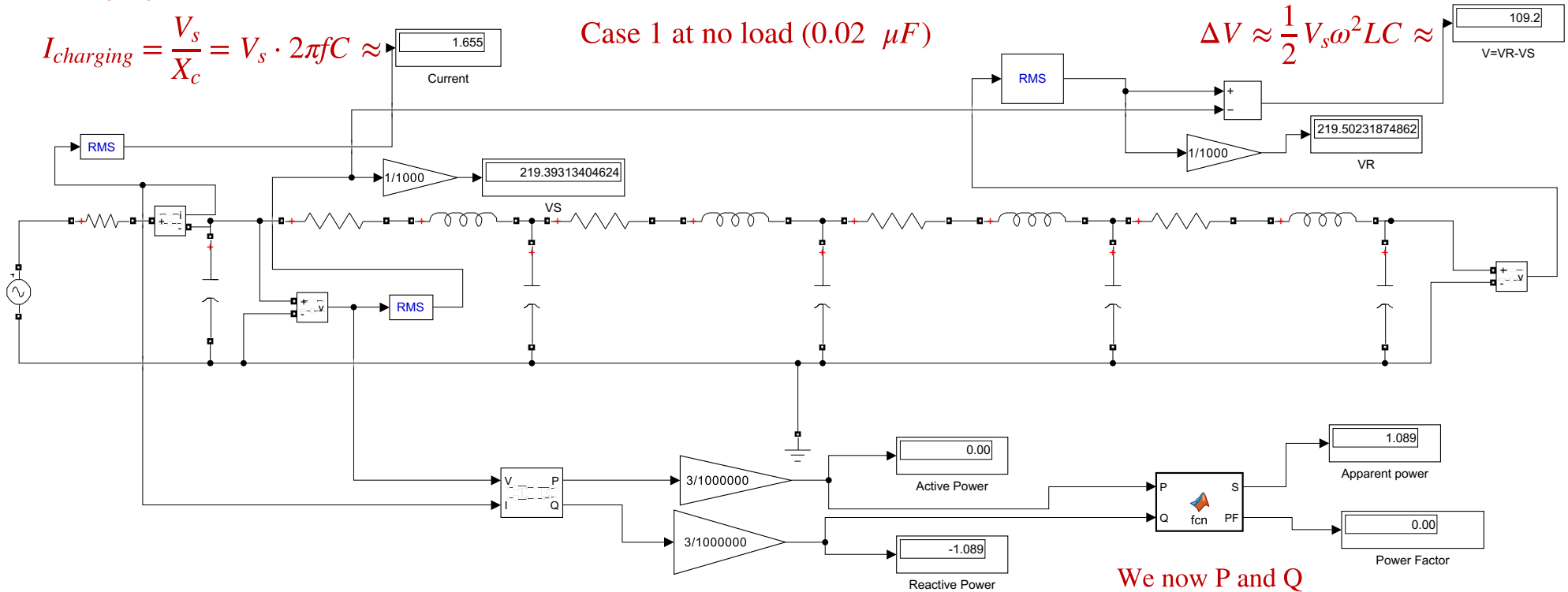
Charging Current:

$$I_{charging} = \frac{V_s}{X_c} = V_s \cdot 2\pi f C \approx$$

Case 1 at no load (0.02 μF)

Ferranti Effect Voltage Rise:

$$\Delta V \approx \frac{1}{2} V_s \omega^2 L C \approx$$



We now P and Q

so

$$S = \sqrt{P^2 + Q^2}$$

Power Factor:

$$PF = \cos(\phi) = \frac{P}{S}$$