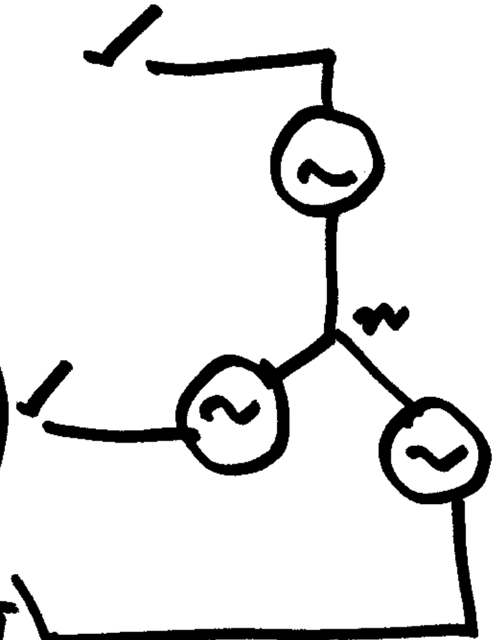
Prof. P. M. Kulkarni
Lec-21
Date- 4/3/10



$$V_{an} = \sqrt{\frac{2}{3}} \sin(\omega_0 t)$$

$$V_{bn} = \sqrt{\frac{2}{3}} \sin\left(\omega_0 t - \frac{2\pi}{3}\right)$$

$$V_{cn} = \sqrt{\frac{2}{3}} \sin\left(\omega_0 t - \frac{4\pi}{3}\right)$$

$$\theta = \omega_0 t + \delta$$

$$\omega = \frac{d\theta}{dt} \neq \omega_0 .$$

$$\begin{bmatrix} i_d \\ i_q \end{bmatrix} = A_3 \begin{bmatrix} \psi_d \\ \psi_q \end{bmatrix}$$

$$\boxed{\frac{2H}{\omega_B} \cdot \frac{d\omega}{dt} = T_m - \left(\psi_d i_q - \psi_q i_d\right)}$$

$$\theta = \omega_0 t + \delta \quad , \quad \frac{d\theta}{dt} = \omega_0 + \frac{d\delta}{dt}$$

$$\boxed{\frac{d\delta}{dt} = (\omega - \omega_0)} \qquad \omega = \frac{d\theta}{dt}$$

$E_{fd} = 1.0$

$\omega_0 = \omega_B$

$\omega \approx \omega_B$

$\omega \approx \omega_0$

$\psi \rightarrow$ steady.

$t=0 \quad \delta = 0$

$$\frac{d\delta}{dt} = \omega - \omega_0$$

$$\boxed{\begin{aligned} v_d &= -1.0 \sin\delta \\ v_q &= 1.0 \cos\delta \end{aligned}}$$

$$\begin{bmatrix} \dot{\psi}_d \\ \dot{\psi}_q \\ \dot{\psi}_H \\ \dot{\psi}_F \\ \dot{\psi}_G \\ \dot{\psi}_K \end{bmatrix} = A_1 \begin{bmatrix} \psi_d \\ \psi_q \\ \psi_H \\ \psi_F \\ \psi_G \\ \psi_K \end{bmatrix} + A_2 \begin{bmatrix} i_d \\ i_q \end{bmatrix} + B_1 \begin{bmatrix} V_d \\ V_q \end{bmatrix} \checkmark$$

$$+ B_2 \dot{E}_{fd} \checkmark$$

$A_1(\omega)$