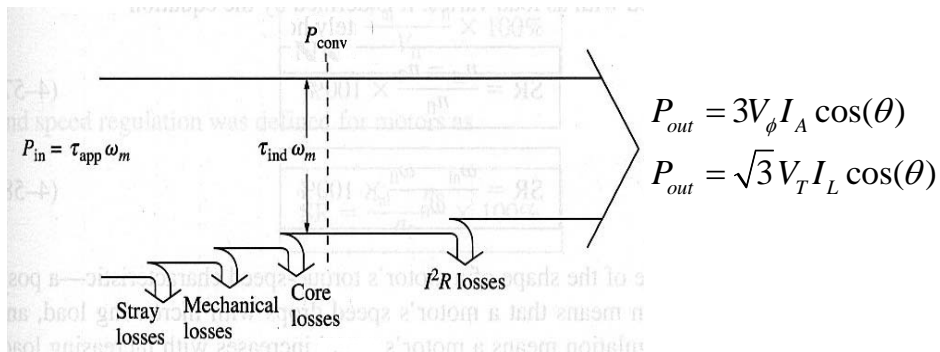


Power Flow in a SM - Generator



Note: θ is the phase angle between armature voltage V_{ϕ} and armature current I_A . It is NOT the angle between V_T and I_L !

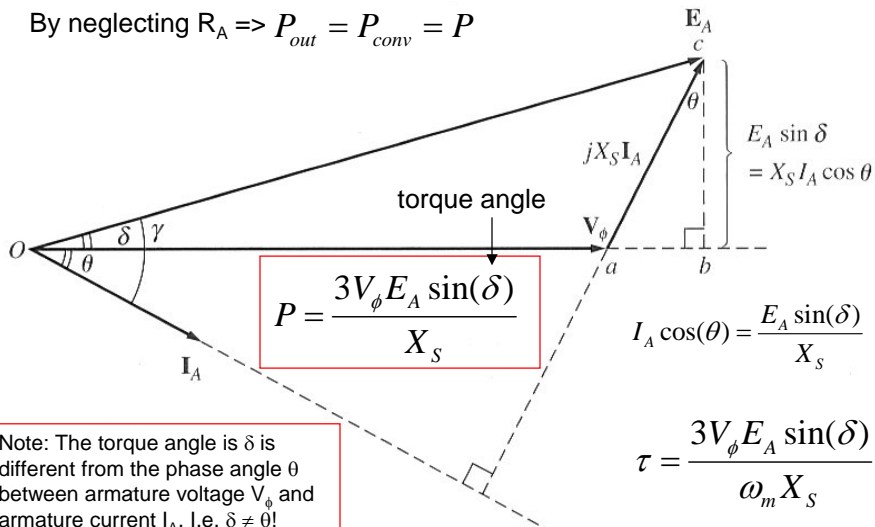
Reactive power

$$Q_{out} = 3V_{\phi} I_A \sin(\theta)$$

$$Q_{out} = \sqrt{3} V_T I_L \sin(\theta)$$

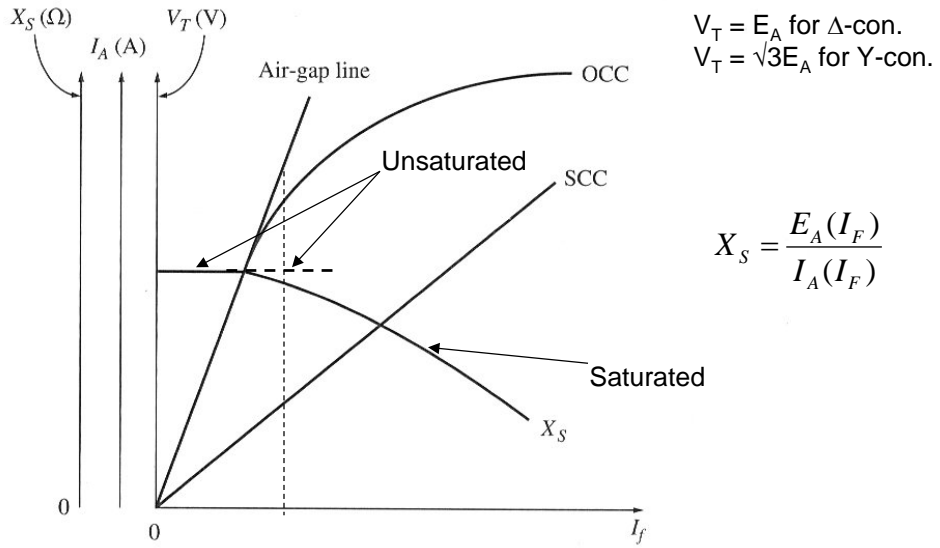
Power Equation of the SM (neglected R_A)

By neglecting $R_A \Rightarrow P_{out} = P_{conv} = P$



Note: The torque angle is δ is different from the phase angle θ between armature voltage V_{ϕ} and armature current I_A , i.e. $\delta \neq \theta$!

Saturated and Unsaturated X_S



Examples 5-1, 5-2, 5-3 (book)

HW 7

Problems 5-1, 5-2, 5-15 in book plus one additional problem, see posting on web-site!
<http://www.eng.fsu.edu/~steuerer/eel3216.html>

Due 10-25-2005 4pm

For consistency of book problem statement always consult web site!