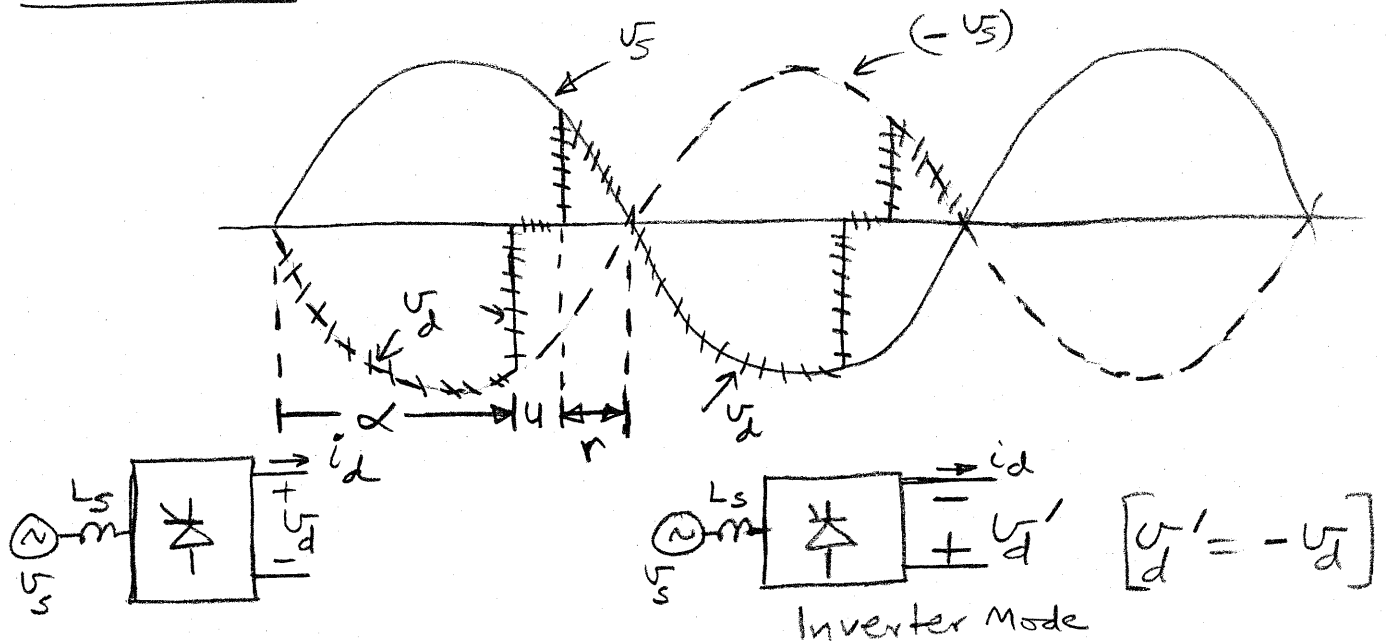


Problem 6-8



To represent the inverter mode of operation, often the output dc voltage polarity is defined as shown in the diagram to the right by V_d' where $V_d' = -V_d$.

If $L_s = 0$ (and hence $u = 0$) but r is the same as in the waveforms above, then we can calculate

$$V_d' (\text{with } L_s = 0) = 0.9 V_s \cos r$$

Because of a finite L_s and a finite u ,

$$V_d' = \overbrace{0.9 V_s \cos r}^{V_{d0}} - \frac{2\omega L_s}{\pi} I_d = V_{d0} \cos r - "R_u" I_d$$

where $"R_u" = \frac{2\omega L_s}{\pi} I_d$. This can be represented as below:

