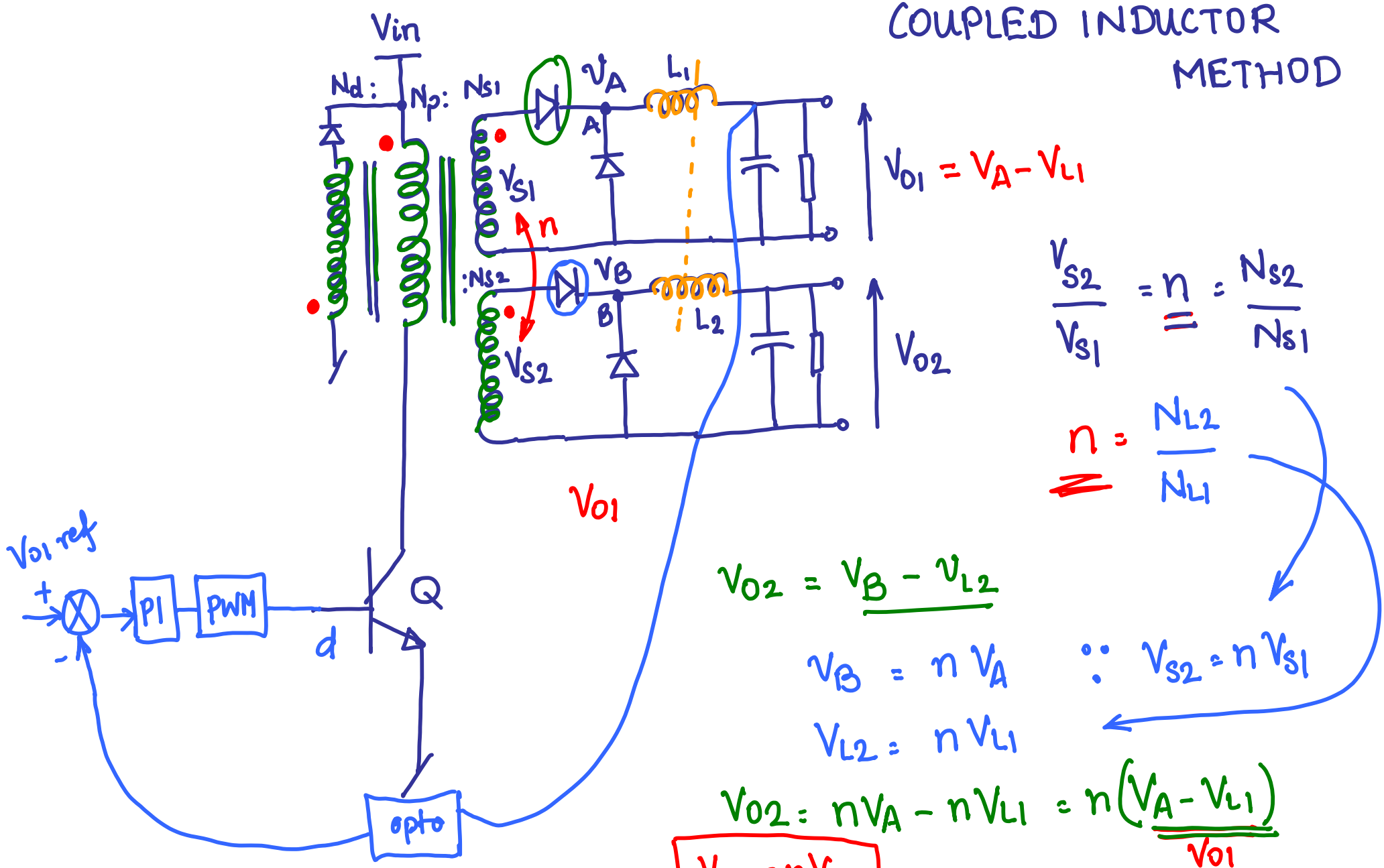
- Coupled Inductor
- Magnetic Amplifier method.

COUPLED INDUCTOR METHOD



$$\frac{V_{S2}}{V_{S1}} = n = \frac{N_{S2}}{N_{S1}}$$

$$n = \frac{N_{L2}}{N_{L1}}$$

$$V_{O2} = V_B - V_{L2}$$

$$V_B = n V_A \quad \because V_{S2} = n V_{S1}$$

$$V_{L2} = n V_{L1}$$

$$V_{O2} = nV_A - nV_{L1} = n(V_A - V_{L1})$$

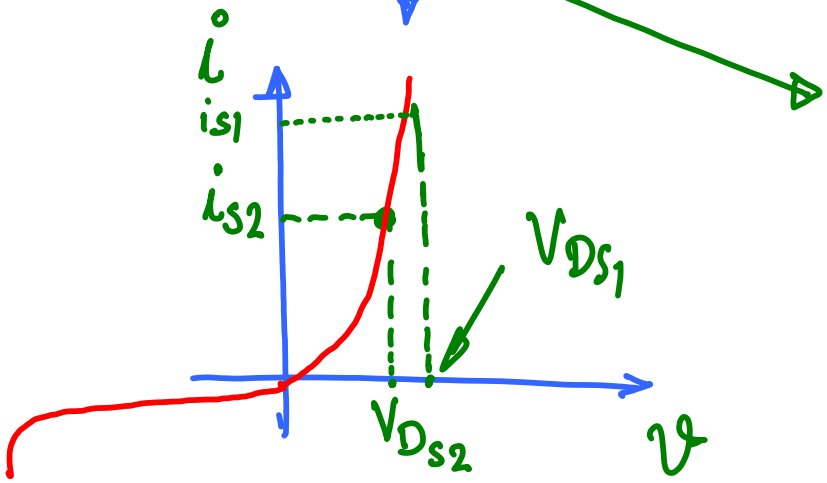
$$V_{O2} = nV_{O1}$$

$V_{O2} = V_B - V_{L2}$

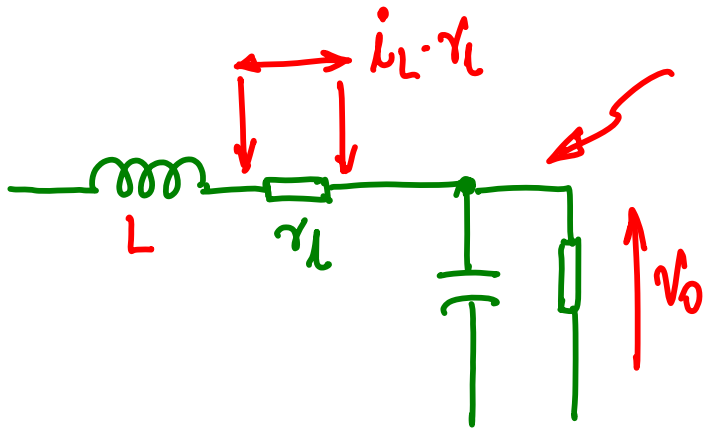
$= V_{S2} - V_D - V_{L2}$

$V_{O1} = V_A - V_{L1}$

$= V_{S1} - V_{DS1} - V_{L1}$

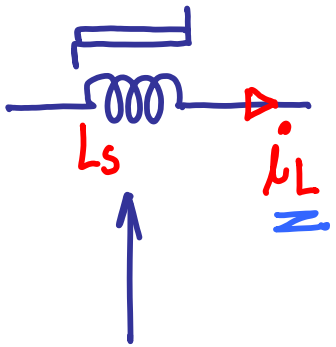


i_{S1}

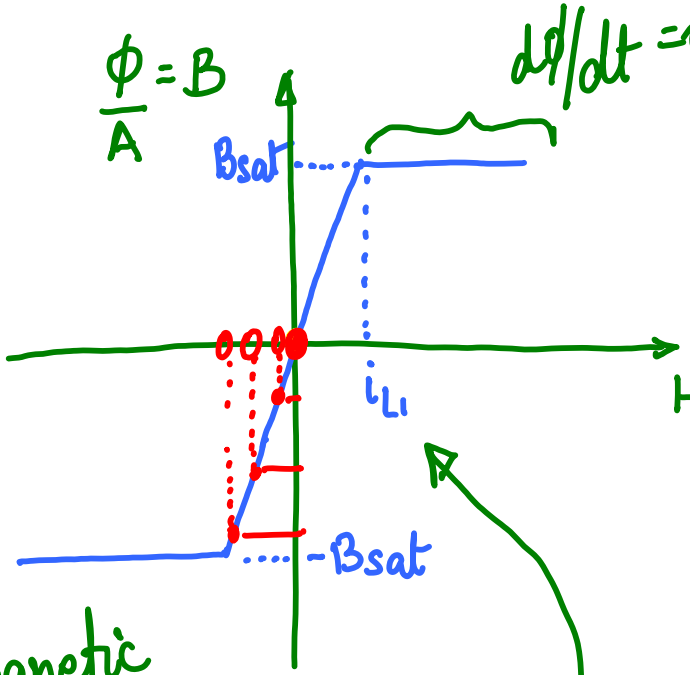


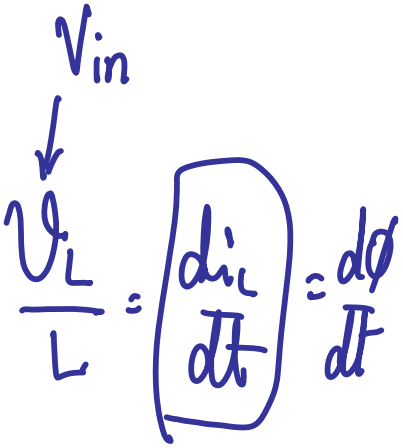
$(V_S - V_D - v_L - i_L r_l) = V_0$

Magnetic Amplifier method

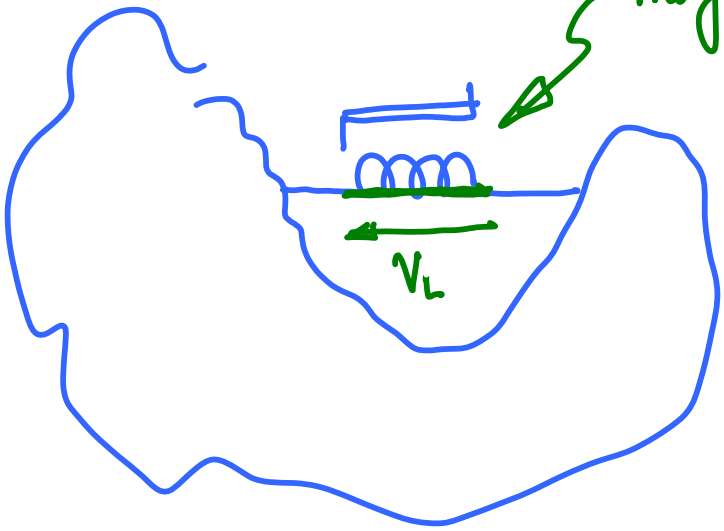


Saturable inductor



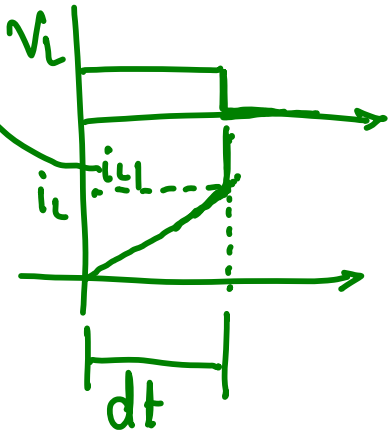


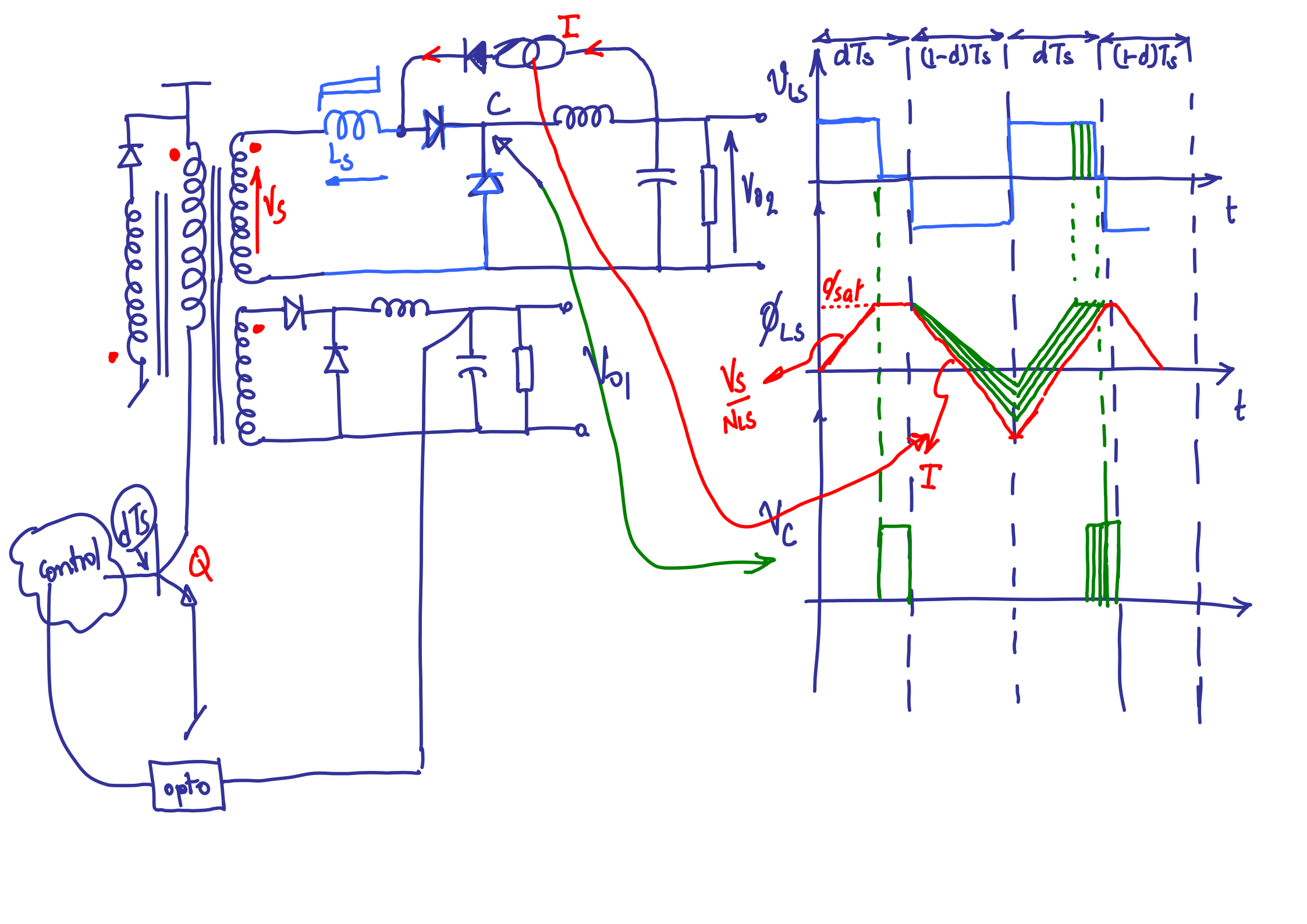
magnetic switch



$$i_L = \frac{1}{L}\int v_L \, dt$$

$$v_L = N\frac{d\phi}{dt} = 0$$




I
C
L_S
V_S
V_{O2}
V_{O1}
control
dTs
Q
opto
dTs
(1-d)Ts
dTs
(1-d)Ts
V_{LS}
t
ϕ_{sat}
ϕ_{LS}
$\frac{V_S}{N_{LS}}$
t
I
V_C