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Model for Open Loop calculation of V_{ref}

Given the most general electrical model of a magnet with parameters:

R_c	Cable Resistance
R_m	Magnet Winding Resistance
R_p	Parallel Resistance
L_m	Magnet (Differential) Inductance

The following differential equation must hold true:

$$\left(R_p + R_m\right)V(t) + L_m \frac{dV}{dt}(t) = \left[R_c\left(R_p + R_m\right) + R_p R_m\right]I_{cir}(t) + \left(R_p + R_c\right)L_m \frac{dI_{cir}}{dt}(t)$$

There are different implementation methods in order to solve for $V(t)$.
One way is to substitute $s \to \frac{d}{dt}$ and then choose one of the following discretization methods and eventually write $V(t)$ in terms of past values $V(t-1)$ and $I_{cir}(t-1)$ and current value $I_{cir}(t)$.

Forward Euler	$\frac{z-1}{T} \to s$
Backward Euler	$\frac{z-1}{Tz} \to s$
Tustin	$\frac{2}{T}\frac{z-1}{z+1} \to s$