Inductor EMF Vs. Current Flow

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- Interpreting Voltage & Current Waveforms

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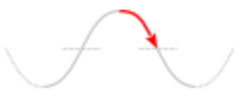
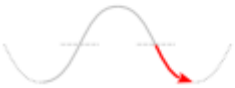
Current	Inductor voltage	Comments
		The current increase and its rate of change $\frac{di}{dt}$ increase too (acceleration). The emf voltage of the inductor increases, but its rate of change $\frac{dv}{dt}$ slow down (deceleration).
		Inflection point[i] of the increasing current curve: The current rate of change $\frac{di}{dt}$ is at its maximum[ii] and emf voltage of the inductor reach a maximum positive voltage. $\frac{dv}{dt}=0$
		The current increase but its rate of change $\frac{di}{dt}$ now slow down (deceleration). The emf voltage of the inductor start to decreases, but its rate of change $\frac{dv}{dt}$ increases (acceleration).
		The current value reach a maximum amplitude, but the rate of change of the current $\frac{di}{dt}=0$ The emf voltage of the inductor = 0 (The waveform have a zero crossing)
		The current start to decrease and its rate of change $\frac{di}{dt}$ increase (acceleration). The emf voltage of the inductor decreases, and its rate of change $\frac{dv}{dt}$ slow down (deceleration).

		Inflection point of the decreasing current curve: The current rate of change $\frac{di}{dt}$ is at its maximum **and** emf voltage of the inductor reach a maximum negative voltage.
		The current decrease and its rate of change $\frac{di}{dt}$ now slow down (deceleration). The emf voltage of the inductor start to increases, and its rate of change $\frac{dv}{dt}$ increases too (acceleration).
		The current value reach a minimum value (but maximum amplitude), the rate of change of the current $\frac{di}{dt}$ = 0. The emf voltage of the inductor = 0 (The waveform have a zero crossing)