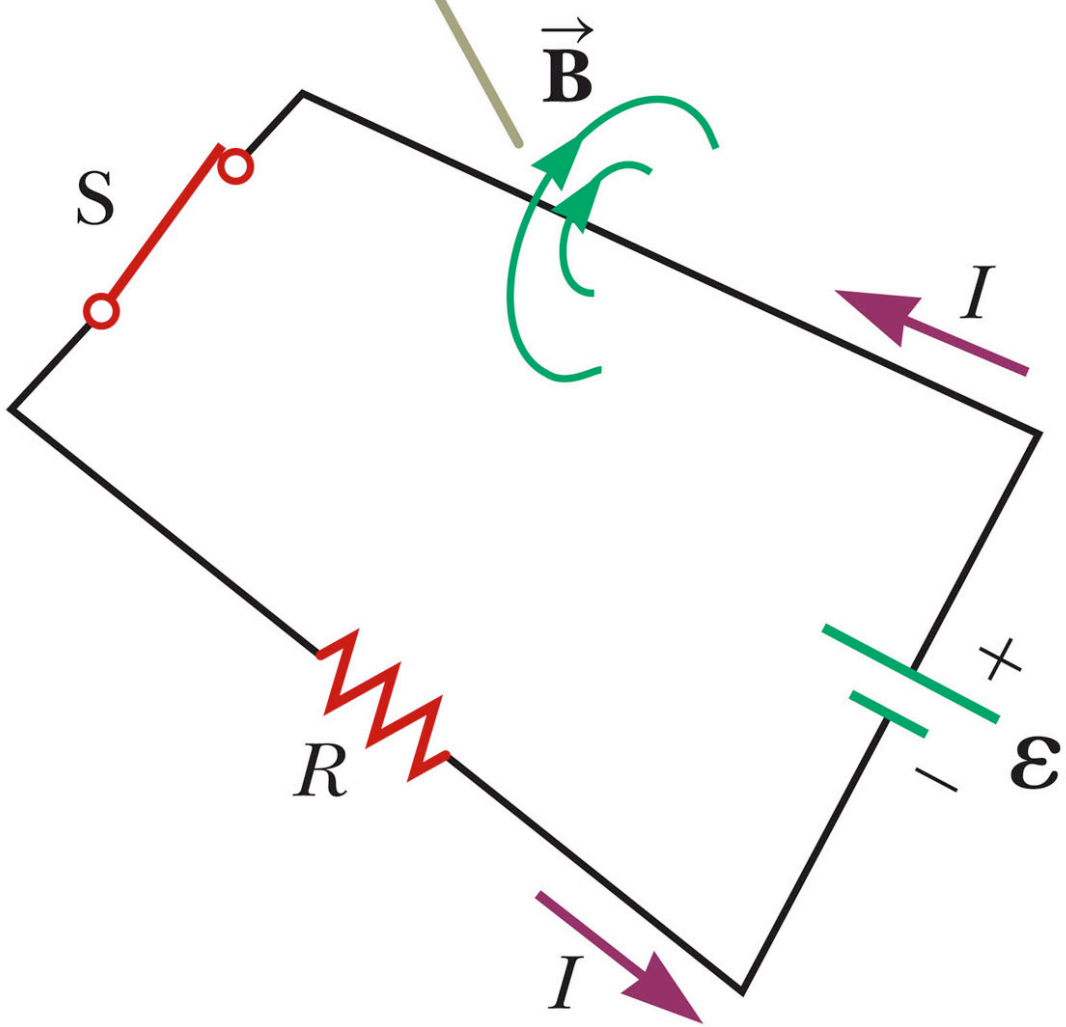
Announcement: Goldman Lectures

Title: The Sound of the Beginning: Echoes of the Big Bang in the Night Sky
Speaker: Liam McAllister (Cornell University)

Place: Health & Public Affairs 125
Date: Thursday, November 17, 2011
Time: 6.00pm
Level: Only high school math is required

Website: goldmanlectures.com

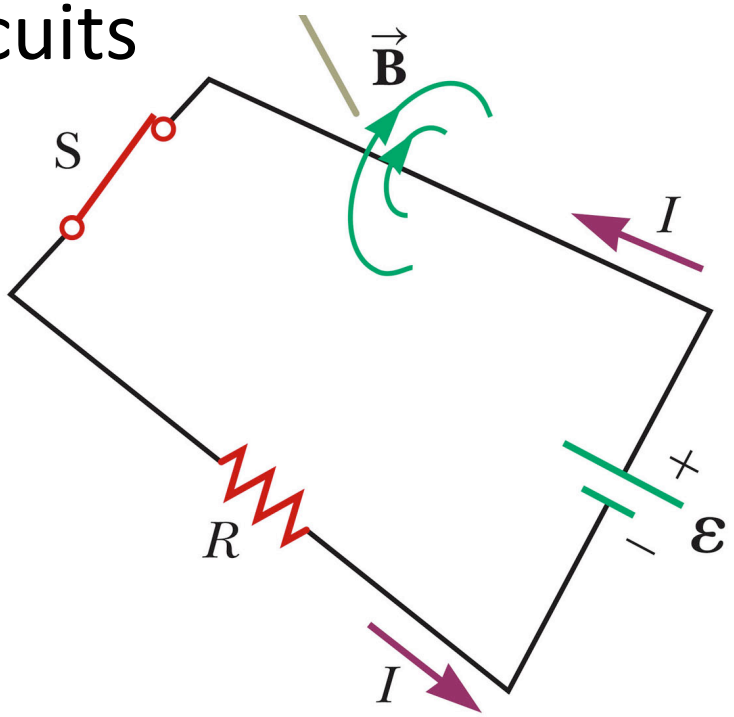


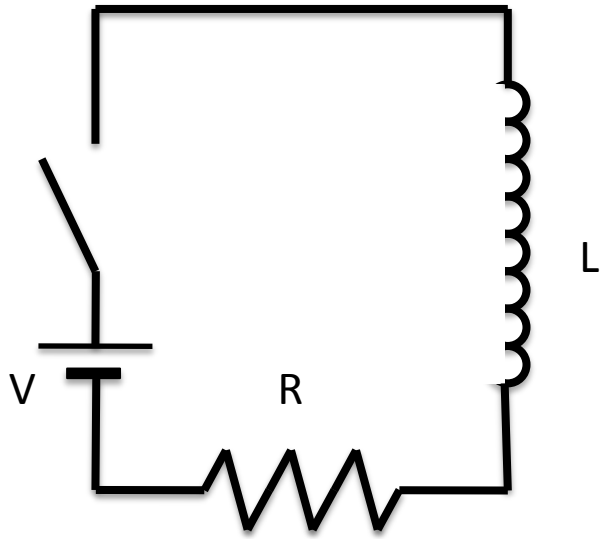
$$\varepsilon = -\frac{d\Phi}{dt}$$

Self induced EMF

$$\varepsilon = -L\frac{dI}{dt}$$

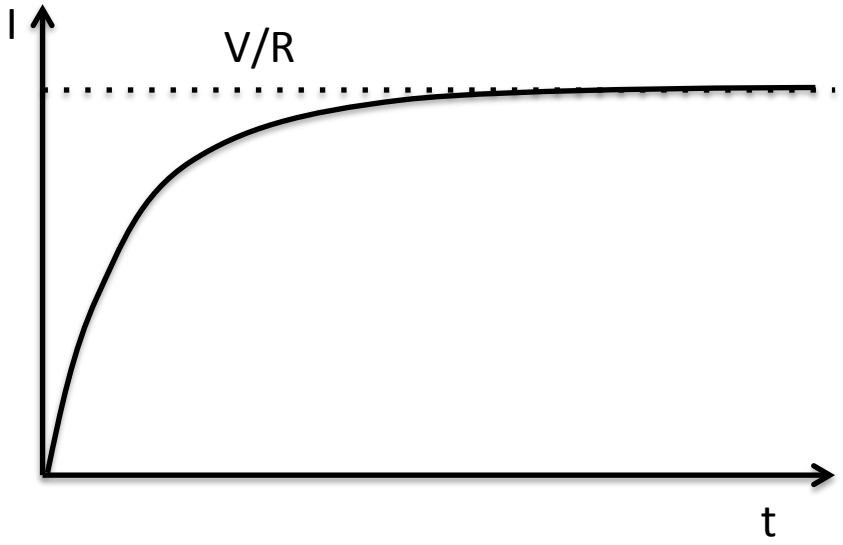
RL circuits





$$V - IR - L\frac{dI}{dt} = 0$$

$$I = \frac{V}{R}(1 - e^{-\frac{R}{L}t})$$



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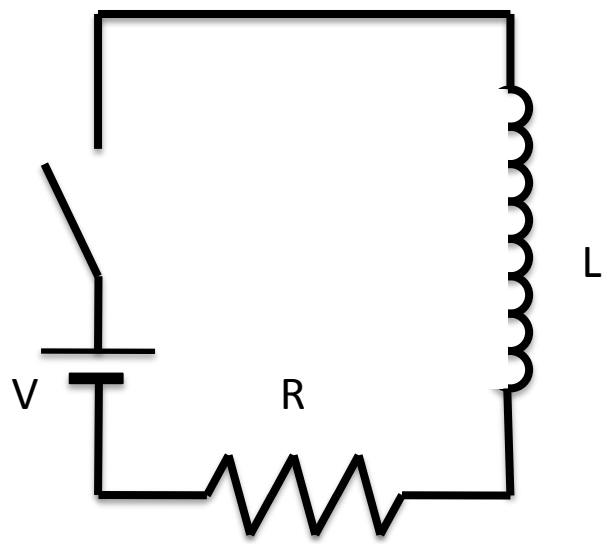


$$IV = I^2R + LI\frac{dI}{dt}$$

Battery Power

Dissipated at resistor

Power going into inductor

$$P_I = LI\frac{dI}{dt}$$

$$U = \frac{1}{2}LI^2$$

Energy stored in inductor

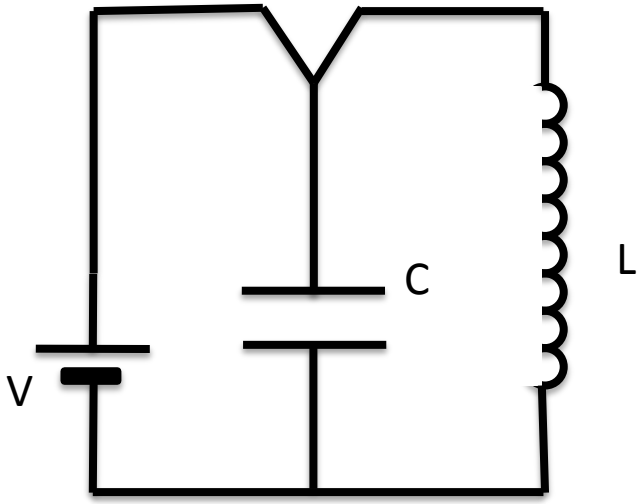
L : inductance

Energies stored in fields

$$u = \frac{B^2}{2\mu_0}$$

$$u = \frac{\varepsilon_0 E^2}{2}$$

Fully charge capacitor and switch to connect to inductor



Projector