

Faraday's Law:

$$emf = \oint \vec{E} \cdot d\vec{\ell} = -\frac{d\Phi_B}{dt}$$

where

$$\Phi_B \equiv \int \vec{B} \cdot d\vec{A}$$

Executive Summary:



$emf \rightarrow$ current \rightarrow field a) induced **only** when **flux is changing**
b) **opposes the change**