

Today in Math History...

-29 August 1831

Faraday discovered electrical induction.

*Faraday's Law of induction states that the induced **emf** (electromotive force) in a closed loop equals the negative of the time rate of change of **magnetic flux** through the loop... induced emf is proportional to the rate of change of the magnetic flux through a coil!*

*The relation between the rate of change of the magnetic flux through the surface S enclosed by a contour C and the **electric field** along the contour:*

$$\oint_C \mathbf{E} \cdot d\mathbf{l} = -\frac{d}{dt} \int_S \mathbf{B} \cdot d\mathbf{A}$$

*where E is the electric field, $d\mathbf{l}$ is an infinitesimal element of the contour C and B is the **magnetic flux density**.*

