

Induced Currents? Faraday? Lenz? What?!

→ Chill out - Section ~~22.5~~ 22.5 of Cutnell makes this sound more complicated than it really is.

Basically, you have a loop of wire placed in a \vec{B} -field. IF AND ONLY IF the \vec{B} -field is changing, a current is induced in the loop.

(i.e. nothing happens if the loop just sits there in a constant \vec{B} -field).

The direction of the induced current is given by Lenz's Law, which says:

Step 1) Figure out which direction the \vec{B} -field is getting stronger. (i.e. if \vec{B} gets weaker into the page, it also gets stronger out of the page).

Step 2) Select the direction opposite that in which the \vec{B} -field gets stronger. Place fingers in this direction. Slide fingers to center of the loop. (remember to use **RIGHT HAND!**)

Step 3) Curl your fingers around the wire. As you slide your hand around the loop, your thumb points in the direction of the current.

Step 4) Write down the answer and shake out your right hand - that had to be uncomfortable!