

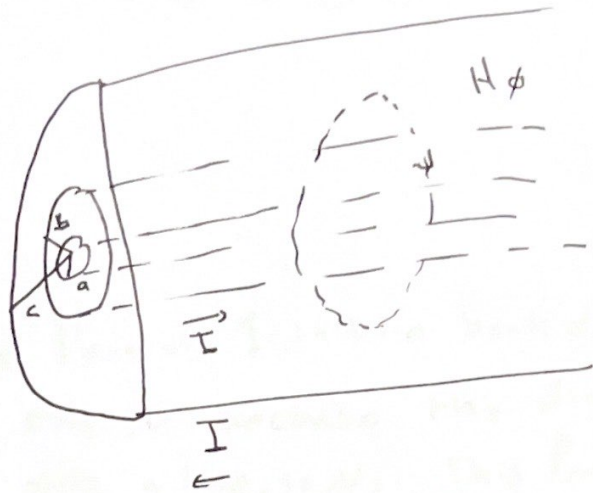
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Find the \vec{H} inside of the exterior conductor
 $b < r < c$

• surface area of
 outer conductor

$$A = \pi(c^2 - b^2).$$

$$\therefore j = \frac{I}{A} = \frac{I}{\pi(c^2 - b^2)}$$



$$\oint \vec{H} \cdot d\vec{\ell} = I_{\text{encl}}$$

$$H_\phi 2\pi r = I - j\pi(r^2 - b^2)$$

$$2\pi r H_\phi = I - I \frac{r^2 - b^2}{c^2 - b^2} = I \left(1 - \frac{r^2 - b^2}{c^2 - b^2} \right)$$

$$H_\phi = \frac{I}{2\pi r} \left(1 - \frac{r^2 - b^2}{c^2 - b^2} \right)$$

$$\Rightarrow \text{At } r=c \rightarrow H_\phi = 0$$

$$\text{At } r=b \rightarrow H_\phi = \frac{I}{2\pi b}$$