



Step 1: Calculate Field Between Metal
Apply Ampere's law to get
$$\vec{H}$$

 $\vec{J} \vec{H} \cdot d\vec{L} = \vec{I}$
 $(\Delta t s i d e Coax)$
Field is Zero
 $\vec{H} = H_{\phi} \hat{a}_{\phi}$
 $\vec{H} = H_{\phi} \hat{a}_{\phi} = \vec{I}$
 $H_{\phi}(\rho) = \frac{\vec{T}}{2\pi\rho}$
Georgia
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Step 3: Calculate Total Flux Between Metal
(3) Integrate Over area to Get Flux

$$d\hat{n} = dz d\rho \hat{a}_{\beta}$$

 $\bar{\Phi}_{m} = \iint_{\partial a} \bar{B} \cdot d\hat{n} = \iint_{\partial a} (\underbrace{\mu_{o}I}_{2\pi\rho} \hat{a}_{\beta} \cdot dz d\rho \hat{a}_{\rho})$
 $= \underbrace{\mu_{o}IL}_{2\pi} \int_{\alpha} \underbrace{1}_{\rho} d\rho$
 $= \underbrace{\mu_{o}IL}_{2\pi} \ln(b/a)$
Georgia









