opic One Electromagnetic Field third section

Seminar One

Dylan

XJTU

2019年7月11日



Outline

- 1 Topic One
 - Converter Valve
- 2 Electromagnetic Field
 - Maxwell
 - Transmission Line
- 3 third section

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- 2 Electromagnetic Field
- 3 third section

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 2019年7月11日 3/1

- 1 Topic One
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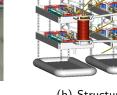
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Structure¹





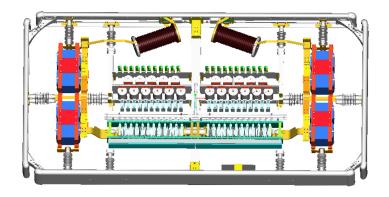
(a) Real Image

(b) Structure

图: Converter Valve

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Layer





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Circuit

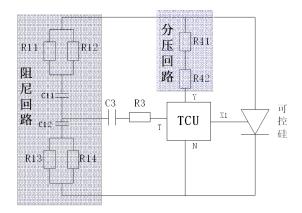


图: Basic Circuit

- 1 Topic One
- Electromagnetic Field



8/15

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Maxwell Equation

$$\oint_{I} \vec{H} \cdot dI = \int_{S} \vec{J} \cdot dS + \int_{S} \frac{\partial \vec{D}}{\partial t} \cdot dS$$

$$\oint_{I} \vec{E} \cdot dI = -\int_{S} \frac{\partial \vec{B}}{\partial t} \cdot dS$$

$$\oint_{S} \vec{B} \cdot dS = 0$$

$$\oint_{S} \vec{D} \cdot dS = q$$

关系

$$\vec{D} = \epsilon \vec{E} \Rightarrow$$
 类似电容的关系 $\vec{B} = \mu \vec{H} \Rightarrow$ 类似电感的关系 $\vec{J} = \gamma \vec{E} \Rightarrow$ 类似电阻的关系

10 / 15

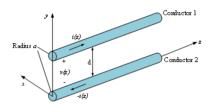
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Telegrapher's Equation



$$-\frac{\partial v(z,t)}{\partial z} = R' i(z,t) + L' \frac{\partial i(z,t)}{\partial z}$$
$$-\frac{\partial i(z,t)}{\partial z} = G' v(z,t) + C' \frac{\partial v(z,t)}{\partial z}$$

12 / 15

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test information

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Thank you!