

# Seminar One

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# Outline

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

1 Topic One

2 Electromagnetic Field

3 third section

## 1 Topic One

### ■ Converter Valve

## 2 Electromagnetic Field

### ■ Maxwell

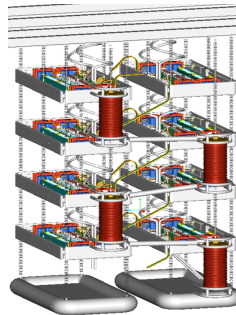
### ■ Transmission Line

## 3 third section

# Structure



(a) Real Image



(b) Structure

图: Converter Valve

# Layer

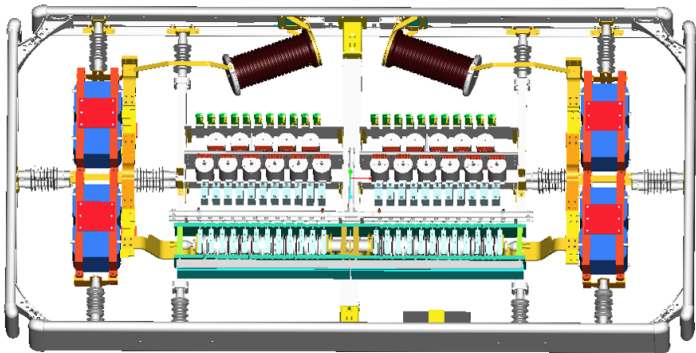


图: Layer

# Circuit

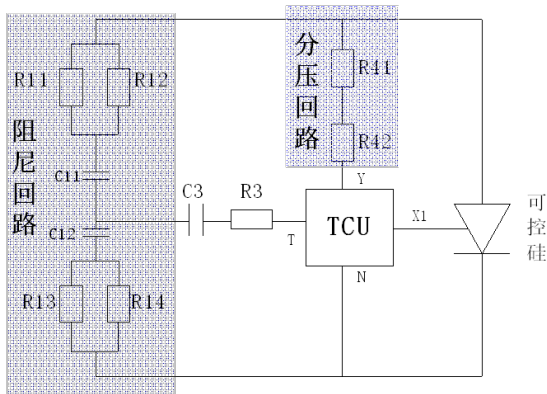


图: Basic Circuit

1 Topic One

2 Electromagnetic Field

3 third section



## 1 Topic One

### ■ Converter Valve

## 2 Electromagnetic Field

### ■ Maxwell

### ■ Transmission Line

## 3 third section

# Maxwell Equation<sup>[1]</sup>

$$\oint_l \vec{H} \cdot d\vec{l} = \int_S \vec{J} \cdot d\vec{S} + \int_S \frac{\partial \vec{D}}{\partial t} \cdot d\vec{S}$$

$$\oint_l \vec{E} \cdot d\vec{l} = - \int_S \frac{\partial \vec{B}}{\partial t} \cdot d\vec{S}$$

$$\oint_S \vec{B} \cdot d\vec{S} = 0$$

$$\oint_S \vec{D} \cdot d\vec{S} = q$$

## 关系

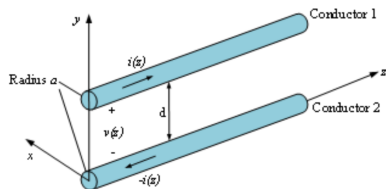
$\vec{D} = \epsilon \vec{E} \Rightarrow$  类似电容的关系

$\vec{B} = \mu \vec{H} \Rightarrow$  类似电感的关系

$\vec{J} = \gamma \vec{E} \Rightarrow$  类似电阻的关系

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# Telegrapher's Equation



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

1 Topic One

2 Electromagnetic Field

3 third section

## 3

test information<sup>[2]</sup>

- Apple
- Peach
- Plum
- Orange

Some text

# Reference



冯慈璋, 马西奎. 工程电磁场导论[M]. 陕西: 高等教育出版社, 2000.



吴锴, 陈曦, 王霞, 等. 纳米粒子改性聚乙烯直流电缆绝缘材料研究 ( ) [J]. 高电压技术, 2013, 39(1): 8-16.

*Thank you!*