

## 高电压技术

### 覆冰绝缘子表面电弧传播的临界条件

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#### 摘要:

覆冰绝缘子的闪络主要是由局部电弧引起的, 研究了2种类型变电站支柱绝缘子覆冰表面上交流电弧传播的临界条件, 确定和分析了空气间隙长度、绝缘子长度和直径对临界电弧维持条件的影响。基于实验结果, 提出了在冰表面上电弧传播的临界条件的数学表达式, 该式有助于完善覆冰绝缘子闪络的数学模型, 可用于长覆冰绝缘子串闪络电压的预测。

#### 关键词:

### Critical Condition of Arc Propagation on Ice-Covered Insulators

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#### Abstract:

The flashover occurred on ice-covered insulators is mainly caused by the formation and propagation of local arc on the ice surface. The authors research the critical conditions of AC arc propagation along the surfaces of ice covering two kinds of post insulators for substations, and the influences of air gap length as well as insulator length and diameter on critical conditions to maintain the arc are researched and decided. Based on experimental results, a mathematical expression for arc propagation along the ice surface is proposed. This expression contributes to perfect the mathematical model of flashover along ice-covered insulator and can be used to predict the flashover voltage of long ice-covered insulator strings.

#### Keywords:

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