

## **Effect of Pollution Distribution Scenarios on Flashover Characteristics on Outdoor Insulators**

### **Absract**

Distribution of the contamination on insulators is often irregular, which threatens the reliability of outdoor insulation. This work aimed to study the influence of pollution distribution, humidity and dry band location with various scenarios on flashover characteristic of insulators. Flashover tests of cup-pin glass polluted insulators were conducted. Findings indicated the difference between the flashover performances of insulators under different pollution distribution. The flashover characteristics like voltage and current are greatly affected by salt deposit density (SDD), distribution modes, and distribution area. The relation between  $U_{50}$  and SDD has positive power function with more contrast in distribution. Insulators with more regular distribution have lowest flashover voltage and highest critical leakage current. Different distribution modes lead to the change of the conductivity of the contamination layer and the uneven distribution of the current density, which is the main cause that the characteristics of pollution flashover are directly related to the pollution modes.

### **Keywords**

FEM model; flashover; polluted insulators pollution distribution