

# **Multiple Regression Technique For Estimating The Insulationstrength Of Series Dielectrics On Distribution Systems: A Statisticalapproach**

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## **Summary**

A method of estimating the lightning-impulse critical-flashover (CFO) insulation strength of two components used on distribution construction is presented. The multiple regression technique (MRT) has been applied to comprehensive CFO data of two dielectric materials in series. General CFO populations of two-component models and sample models for different combination of two materials have been developed. A diagnostic correction test is performed for the general case and for each combination model, to decide which models fit well. Suggestions are made regarding the more accurate prediction model, and the main factors that might have affected predicted results are emphasised. Also, a procedure to predict values outside the experimental results range is described for other sizes and lengths of the tested components. This procedure may be a good tool for finding better insulation added in distribution systems

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