



Analysis of the disruptive effect model for the prediction of the breakdown characteristics of distribution insulators under non-standard lightning impulses

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One of the most commonly used methods for predicting the strength of insulation subjected to lightning impulses of non-standard waveshapes is the Disruptive Effect Model, for which there are different procedures for the estimation of the parameters required for its application. This paper aims at analyzing the main methods for the determination of such parameters. The investigation is based on the comparison of the measured and calculated volt-time characteristics of a 15 kV pin-type porcelain insulator considering two short tail impulse waveshapes (1.2/4 μ s and 1.2/10 μ s), as well as the standard 1.2 /50 μ s impulse voltage waveshape. The results relative to the positive and negative polarities of the three voltage waveshapes are presented and discussed.