Finite Element Solution Of Monopolar Corona On Bundle Conductors

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Summary

A modified finite element iterative based method (FEM) is developed to analyze the monopolar ionized field and hence compute the associated corona power loss on bundle conductors (bundles two, three and four are considered). The effect of the number of bundles, and the bundle spacing on the corona current and ground plane current density profiles is investigated. It has been found that with the increase in the number of bundles, the corona current decreases. On the other hand, the corona current increases with the increase in the bundle spacing. A laboratory model was built to check the accuracy of the calculated corona current and the ground plane current density profiles. It has been found that the present results agreed well with the present and previous experimental values

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