

A Combined Algorithm Based On Finite Elements And A Modified Method of Characteristics For The Analysis Of The Corona In Wire-Duct Electrostatic Precipitators

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Summary

This paper numerically analyzes corona power loss associated with wire-duct electrostatic precipitators. The finite-element method is used to solve Poisson's equation and a modified method of characteristics is used to satisfy the current continuity condition. The two methods are repeated iteratively to obtain a self-consistent solution of the describing equations. The effectiveness of this approach is tested by comparing the computed results with previously obtained experimental and calculated values. The agreement with experimental results is found to be satisfactory

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