Corona performance of -to-plane gaps as influenced by underneath grounded and negatively stressed metallic grids

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Abstract:

This paper is aimed at investigating how the positive dc corona performance of conductor-to-plane gaps is influenced by grounded and negatively stressed metallic grids located underneath the coronating conductor. A systematic experimental study is made to investigate the corona current/voltage characteristics and the current density distribution at the ground plane with and without grid. The wire-to-wire spacing, number, lateral distribution and height of grid wires as well as the conductor diameter are varied. The current density distribution at the ground plane is correlated with Warburg law that was proposed for point-plane coronas.

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