



(1)

DC Corona Discharge on Monopolar Bundle Wires

M. Abdel-Salam, M. Farghally and S. Abdel-Sattar

Abstract:

The solution of monopolar corona equation already reported in literature is extended for bundle conductors using a modified iterative procedure to estimate the corona current contributed by each subconductor of the bundle. The solution is based on underlying assumptions, some of which are waived in the present calculations. The variation of ion mobility with its lifetime as well as the change of the corona onset voltage from point to point on each subconductor are taken into account for the first time. The calculated corona currents from each subconductor are compared with those measured experimentally for a laboratory model.

Keywords:

Applied Electric Field, Corona Discharge, Flux Line, Current Density Distribution, Space Charge Density

Published In:

Acta Physica , Vol. 54 , pp. 313-331



(2)

Positive Corona in Point-Plane Gaps as Influenced by Wind

M. Abdel-Salam, H. Abdallah, S. Abdel-Sattar and M. Farghally

Abstract:

In this paper, the effect of wind on positive corona behavior up to breakdown is studied for point-plane gaps when the wind is flowing axially (against or parallel to the direction of ion convection from the point to the plane). The repetition rate of streamer pulses and its randomness as influenced by wind has been determined for different applied voltages. The spatial distribution of the current density over the ground plane has been examined for different applied voltages in still air and with wind blowing in the axial and transverse directions. The time-averaged value of wind-blown corona current as a function of the applied voltage was also determined. The results obtained are correlated with previous findings and with the theories of corona discharges.

Keywords:

NULL

Published In:

IEEE Transactions on Electrical Insulation , Vol. 22 , pp. 775 .786



(3)

Monopolar Corona on Bundle Conductors

M. Abdel-Salam, M. Farghally and S. Abdel-Sattar

Abstract:

NULL

Keywords:

Corona , Conductors , Equations , Voltage , Space charge , Electrodes , Boundary conditions , Current distribution , Density measurement , Current measurement

Published In:

IEEE Power Engineering Review , PER-2-10 , pp. 59-60



(4)

Losses Charts for Determination of Power Transformer Energy Losses

S. Abdel-Sattar M. Farghally

Abstract:

NULL

Keywords:

NULL

Published In:

AMSE periodicals, Modeling, Simulation and Control, A , 30-2 , 55-63