ELECTROMAGNETIC-PULSE COUPLING ANALYSIS OF OVERHEAD TRANSMISSION LINES

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ABSTRACT

THE PURPOSE OF THIS STUDY IS TO EXAMINE THE EFFECTS OF EMP COUPLING ON OVERHEAD TRANSMISS -ION LINES. FIRST, A THEORETICAL MODEL OF MULTICONDUCTOR TRANSMISSION LINE IS DERIVED AND USED TO OBTAIN THE TRANSFER FUNCTION OF AN EMP COUPLING TO THE TRANSMISSION LINE. ON THE BASIS OF THIS FUNCTION, THE COUPLING EFFECTS OF TWO-CONDUCTOR AND MULTICONDUCTOR TRANSMISS -ION LINES ARE ANALYZED BY VARYING THE INCIDENT ANGLE, THE TERMINATION IMPEDANCE AND THE ASSOCIATED DIMENSION.THE PROXIMITY EFFECT IS ALSO DISCUSSED.FINALLY,THE LOSSY GROUND EFFECT IS INVESTIGATED BY VARYING THE LOSSY PARAMETERS, AND THE WIRE TO GROUND DISTANCE.

Keywords : EMP、TRANSMISSION LINE

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