

Laplace Equation solving by having boundry condition in MATLAB

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In this paper, my project about computational solve of laplace equation by having boundry condition is presented. By solving equations and drawing in MATLAB Program, solving Microwave waveguide parameters and cable line items is possible. In this paper, I have solved a theory by help my design and laplace and poisons equations by boundary condition. In this project from computational mathematics and my theory idea for solve this equation has used.

Index Terms—Laplace equations, Finite difference Methods, Waveguides, Matlab.

I. INTRODUCTION

This paper is based on Numeric Estimation that for unsymmetrical figures has benefits. Also, this project by Finite Difference Method and Matlab Programming and knowing potential in boundary condition, field in Microwave Devices or parameters in Transfer Electronics Line obtain. I means by this program, from differential equation of potential by knowing boundary condition distribution of bar in conjugate Waveguide Devices, obtain. Even, this program by drawing 3 dimensional bar response, we can solve the some equations in power electronics also theory of Bose. Instain in Quantum Theory.

II. NUMERICAL METHODS FOR MODELING OF FIELD

NUMERICAL METHODS HAVING ARE FINITE DIFFERENCE, FINITE ELEMENT, TLM, MOMENT, GALERKIN. BUT IN THIS PROJECT, FINITE DIFFERENCE METHOD HAS USED.

III. FINITE DIFFERENCE METHOD

FROM METHODS ABOVE, FINITE DIFFERENCE METHOD HAS CHOSEN. AND FOR UNSYMMETRICAL FIGURES IS BETTER. FOR SOLVE IMPEDANCE SPECIFICATION IN ELECTRICAL LINES, THIS METHOD AND PROGRAMMING HAS BENEFITS.

IV. A SAMPLE OF RESULT OF EXECUTION PROGRAM BY HAVING BOUNDARY EQUATION.

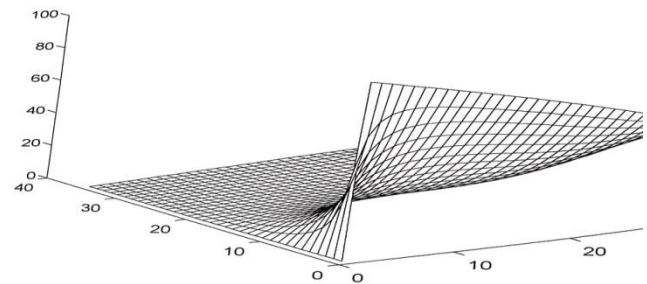


Fig. 1. A sample of result of execution program by having boundary equation.

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