**ANTENNAS AND WAVE PROPAGATION**

**LAB ASSIGNMENT 9**

**EXPERIMENT 9**

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**DIVISION: G2; EA 3**

**AIM**: Design a rectangular MSA and obtain parametric analysis on dielectric constants.

**THEORY**: Optimetrics is a powerful new feature in Ansoft HFSS that provides parametric and optimization capabilities for 3-D RF and microwave design problems. The approach used is very general and allows any design quantity to be parameterized and optimized. It even allows outside programs such as MatLab to be used to drive the optimization. The examples shown indicate the ease with which parametric solutions may be set up and the power of the new optimization capability. Significant applications of Optimetrics include fine-tuning preliminary designs, searching the design space for acceptable designs and the possibility of creating excellent designs from scratch. All of these applications provide good productivity improvements for designers and allow precision designs to be created with minimal cost and time.

**SCREENSHOTS OF THE DESIGN:**

**Graphical user interface, application, Excel

Description automatically generated**

**SCREENSHOT OF THE OUTPUTS:**

**Graphical user interface, application

Description automatically generated**

**Graphical user interface, application

Description automatically generated**

**Graphical user interface

Description automatically generated**

**CONCLUSION: Parametric Analysis on the Dielectric Constants has been successfully done. Now since the difference between the variation of lengths we gave is less so we have a somewhat similar plot for all four values. This shows the stability of the design. Such analysis helps designers in trying out different dimensions to check the various outputs of the design. In this experiment we have learnt how to design a rectangular MSA and obtain parametric analysis on dielectric constants successfully.**