THE APPLICATION OF THE JOINT METHOD IN ORDER TO COMPUTE THE EFFECTS GENERATED BY THE SHIFTING OF THE SOURCE IN A LOADED CAVITY

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ABSTRACT

The shifting of the source after the propagation axis is used especially in the load adaptation. This technique is used when constructing the microwave oven, when the magnetron is within the waveguide that is attached to the cavity. It is required that the distance between the short circuit and the antenna have the maximum of dissipated power in the oven's cavity.

The cavity is loaded with two dielectric rods with differential losses. On one hand we study the profile of the electric field in the cavity and the dissipated power in the dielectric rods, and on the other hand, the shifting of the source after the 0x and 0z axes. This study allows us to know the effects that are generated by the shifting of the source on the sample, and consequently to visualize the mode type influence.

The presence of the two samples with different constant creates a dissymmetry of the electric field distributions in the cavity. This dissymmetry is visible on the different parts of the field and power profiles.

The shifting of the source towards left or towards right causes an amplification or diminution of the maximum or minimum points. We notice the loss or the appearance of the maximum or minimum points on the field curves.

The dissipated power in the dielectric is more or less influenced by the field changes. There are more maximum points on the different power curves. The shifting of the source modifies the amplitude and the position inside the oven.