

Radiation Characteristics Of An Infinite Dielectric-Coated Axially-slotted Cylindrical Antenna Partly Embedded In A Ground Plane

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Summary

The radiation characteristics of an axial slot on a dielectric-coated conducting circular cylinder embedded in a semi-circle in an infinite ground plane (GP) are examined. The boundary-value method is employed to obtain the solution with the aid of the partial orthogonality of the trigonometric functions. The resulting dual infinite series involved in the solution is then truncated to generate numerical results. The geometry considered here is important because it can be implemented on the body of any mobile communication system. Moreover the GP adds a new parameter to the slotted dielectric-coated conducting circular cylindrical antenna and can be used in beam shaping and to enhance the antenna performance

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