

论文

导电媒质包围的球形空腔内的圆环天线的特性

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摘要

本文导出了导电媒质在被其包围的球形空腔中的圆环天线内产生的输入阻抗的公式。描述了导电媒质中天线辐射性能的定义。导出了圆环天线的辐射电阻公式。数值计算结果表明所得的两个公式收敛迅速,一般只需取第一项或前两项之和即可。探讨了这些数值与空腔半径等参数之间的关系。

关键词 [圆环天线](#) [导电媒质](#) [输入阻抗](#) [辐射电阻](#)

分类号

THE CHARACTERISTICS OF A CIRCULAR LOOP ANTENNA IN SPHERICAL CAVITY SURROUNDING BY CONDUCTIVE MEDIUM

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Abstract

A formula of input impedance of a circular loop antenna in spherical cavity surrounding by conductive medium is obtained. The definition of radiation performance of the antenna in conductive medium is given. The formula of radiation resistance of the antenna is derived. The results of numerical calculation show that the two formulas converge very fast, so it is feasible to take the first term or the sum of first two terms only. The relationship between above mentioned characteristics and the parameters, such the radius of spherical cavity and others, is discussed.

Key words [Circular loop antenna](#) [Conductive medium](#) [Input impedance](#) [Radiation resistance](#)

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