论文　　　　　　　　　　最新目录 | 下期目录 | 过刊浏览 | 高级检索　　　<<　◀◀ 前一篇 | 后一篇 ▶▶　>>

劈绕射系数的一种通用表达式及应用

吕善伟, 张超峰, 刘永华

北京航空航天大学

A EXPRESSION FOR DIFFRACTION BY A WEDGE AND ITS APPLICATION

Lue Shanwei, Zhang Chaofeng, Liu Yonghua

Beijing University of Aeronautics and Astronautics

摘要　　　参考文献　　　相关文章

Download: PDF (382KB)   HTML 0KB   Export: BibTeX or EndNote (RIS)   Supporting Info

摘要

在讨论矩形波导辐射场、飞行器翼边电磁散射场时,要用到二维金属尖劈的绕射系数表达式。许多学者对尖劈绕射场进行了详细讨论,给出了明确结果,其中级数形式的严格解收敛速度较慢,简化公式是当源置于无限远处取得的,对于尖劈近区场源问题没有触及,文献[2]给出的简化解析式在应用上有一定的困难。因此我们重新进行了推导,获得一种新的表达式,适合于近、远场源问题的数值计算。矩形波导棱边的绕射是普通劈尖的一个特例。

关键词： 劈绕射　缝隙天线阵方向图　矩形波导　奇异性

Abstract：

In this paper, a new expression for diffraction by a two-dimension wedge which is convenient for computer calculation is presented. The calculation of the diffracted field by edge and E-plane patterns of slot array in a rectangular waveguide is analyzed. The singularity which appears in calculation and usable treating method are discussed. The result indicates that if the integral path is suitable end Gauss's method,which can be used to calculate some integrals with singular points in integrated functions, is used,the singularity can be settled satisfactorily. The formulae in the nresent paper are suitable widely, with them near zone field can be calculated as well as far zone field, and they are suitable for single slot and slot array. Two different longitudinal slot array's E-plane patterns of a standard X-band rectangular waveguide are calculated. The results of calculation are in good agreement with those from measurement.

Keywords： wedge diffraction   slot array pattern   rectangular waveguide   singularity

Received 1987-10-17;

Service
▸ 把本文推荐给朋友
▸ 加入我的书架
▸ 加入引用管理器
▸ Email Alert
▸ RSS

作者相关文章
▸ 吕善伟
▸ 张超峰
▸ 刘永华