

论文

Coons曲面结合B样条拟合大型面天线变形反射面

王从思, 段宝岩, 仇原鹰

西安电子科技大学机电工程学院 西安 710071

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摘要

为了精确反映变形反射面实际形状, 该文提出了一种新的分块拟合方法。该方法首先对变形反射面进行分环分块划分, 再对每个块域分别进行Coons曲面拟合, 并采用周向三次与径向二次B样条曲线来确定块域的边界条件, 进而得到准确的反射面变形整体和局部信息。通过对不同情况下某16m天线的机电性能综合分析, 证明了此方法是准确、有效的。

关键词 [变形面天线](#) [分块拟合](#) [Coons曲面](#) [B样条曲线](#) [增益损失](#)

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On New Fitting Method of Large Distorted Antenna Reflectors Based on Coons Surface and B-Spline

Wang Cong-si, Duan Bao-yan, Qiu Yuan-ying

School of Electromechanical Engineering, Xidian Univ., Xi'an 710071, China

Abstract

A novel Divided-Fitting Method based on Coons surface and B-spline (DFMB) to fit the distorted antenna affected by different loads is presented for accurately describing the real deformation of antenna surface. It firstly divides the distorted reflector into many individual zones, uses the Coons surface to fit each zone, and determines the boundary of each zone by third-order hoop and second-order radial B-spline curves. Then the precise local and total information of distorted reflector can be obtained to compute the electrical performances of antenna. The good electromechanical simulation results of the application to a 16-m parabolic antenna proved the validity of developed method.

Key words [Distorted antenna](#) [Divided-fitting method](#) [Coons surface](#) [B-spline](#) [Gain loss](#)

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通讯作者

作者个人主页 王从思; 段宝岩; 仇原鹰

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