

论文

二维多体散射系统分析

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摘要

本文提出一种多体散射系统的普遍化的分析方法,原则上能处理任意形式的多体散射系统。利用系统散射方程把多体问题归结为一组单体问题,然后用有限元法对各个单体问题逐个进行分析。本文着重讨论二维多体系统,并给出由介质涂敷导体构成的三体散射系统的计算实例。

关键词 [电磁散射](#) [多体散射系统](#) [有限元法](#)

分类号

NUMERICAL ANALYSIS OF TWO-DIMENSIONAL MULTI-OBJECT SCATTERING SYSTEMS WITH ARBITRARY STRUCTURE

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Abstract

A general analysis approach to multi-object scattering systems of arbitrary structure is presented. Through the system scattering equation (SSE), the multi-object problems are first transformed into a series of single-object problems. Then we solve the single-object problems, one-object by one-object, TO yield the unknown coefficients of SSE and finally obtain the complete solution of original multi-object problems. As to the solutions of single-object problems, we use the finite element method for complex scatterers, or simply the moment method for conducting scatterers. We will confine ourself in two-dimensional cases, and show some calculation examples of 3-object conducting cylinder scatterers coated with dielectric material for demonstration.

Key words [Electromagnetic scattering](#) [Multi-object scattering system](#) [Finite element method](#)

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