

电子学

适用于特定介质电磁散射的单等效流积分方程

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摘要 为解决介质电磁散射问题中传统的单等效流积分方程中计算复杂度高的问题, 提出了一种新的单等效流积分方程. 通过计算若干介质的雷达散射截面, 发现对于高介电常数的介质体, 该方程能在保证一定计算精度的同时, 显著降低数值积分的奇异性和计算总量. 最后简单分析了该方程成立的原因.

关键词 [单积分方程](#) [高介电常数](#) [雷达散射截面](#) [矩量法](#)

分类号 [TN011](#)

Single integral equation for electromagnetic scattering by given dielectric objects (Chinese)

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Abstract

In order to simplify the computation complexity for traditional single integral equation in electromagnetic scattering from dielectric objects, a new single integral equation was proposed. The numerical results of RCS (radar cross section) obtained from several dielectric objects with large permittivity are in agreement with the exact results. Furthermore, the calculation amount is reduced apparently and the singularity of the integral core is weakened. The validity of the new single integral equation was also discussed.

Key words [single integral equation](#) [large permittivity](#) [radar-cross section](#) [method of moment](#)

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