

论文

手性障碍电磁散射的PML有限元计算

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摘要:

该文建立了手性障碍电磁散射问题的二维模型, 给出问题的有限元分析, 并利用结合PML(perfectly matched layers)技术的有限元法进行数值模拟.

关键词: 手性 PML 有限元法

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The Finite Element Method with Perfectly Matched Layers for the Electromagnetic Scattering by a Chiral Obstacle

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Abstract:

This paper is concerned with the electromagnetic scattering by a chiral obstacle. A two-dimensional mathematical model is established. The existence and uniqueness of the problem is discussed by a variational approach. A finite element method with perfectly matched layers(PML) is developed for solving the problem.

Keywords: Chiral media Perfectly matched layers(PML) Finite element method

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参考文献:

[1] Athanasiadis C, Costakis G, Stratis I G. Electromagnetic scattering by a homogeneous chiral obstacle in a chiral environment. SIMA J Appl Math, 2000, 64: 245--258

[2] Colton D, Kress R. Inverse Acoustic and Electromagnetic Scattering Theory. New York: Springer-Verlag, 1992

[3] John F. Partial Differential Equations. Fourth Edition. New York: Springer-Verlag, 1982

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[4] 高天玲.某些手性介质电磁散射和反散射数学问题的分析与计算. 长春: 吉林大学, 2007

[5] Collino F, Monk P B. The perfectly matched layer in curvilinear coordinates. SIAM J Sci Comput, 1998, 19: 2061--2090

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