

物理学 电子科学与技术

## 基于虚拟源树的射线跟踪算法的研究

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收稿日期 2007-7-5 修回日期 2008-1-8 网络版发布日期 2008-5-22 接受日期 2008-1-9

摘要

提出一种有效的室内电波传播预测算法——基于虚拟源树的射线跟踪法.采用Delphi语言的多叉树结构存储发射源、反射源和绕射源以及接收点数据,并判断虚拟源树节点是否有效,从而使整个射线跟踪过程更便捷和高效.该算法的预测结果与FDTD(Finite Difference Time Domain)仿真结果基本吻合,实地测试也证明该算法的有效性.

关键词 [虚拟源树](#) [射线跟踪](#) [Delphi语言](#) [FDTD](#)

分类号 [TN99](#)

## Ray tracing method based on a virtual source tree (Chinese)

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### Abstract

An effective ray tracing method based on virtual source tree for prediction of indoor radio propagation was presented in this paper. The data of transmitting source, reflection source, diffraction source and receiving point were stored with many-fork tree in Delphi, and the validity of the nodes of the tree was estimated, to make the ray tracing course more simple and efficient. It was found that the predicted results with the method are in good agreement with the simulated results in FDTD, and the validity of the method is also verified by the experimental test.

**Key words** [virtual source tree](#) [ray tracing](#) [Delphi language](#) [FDTD](#)

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