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口径天线绕射场的研究

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STUDY OF DIFFRACTION FIELD OF APERTURE ANTENNA

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摘要	参考文献	相关文章

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摘要 介绍口径天线近场绕射计算的卷积积分法 ,该方法可用 FFT实现快速计算 ,故它是比传统的直接积分或球面波展开法更有效的一种计算模式。在此基础上 ,对圆形和矩形口径天线的近场绕射特性进行了研究。由计算结果可见 ,口径天线在观察面上的绕场分布与口径形状、口径尺寸 (D/λ)和观察面至口径有关。还对减小口径边缘的近场绕射问题进行了分析

关键词：

Abstract: In this article,a calculation method of convolution integration for near field diffraction of aperture antennas is discussed.This method can accomplish fast calculation by FFT,and it is a more efficient one than direct integration or spherical wave expansion method(SWE).Based on this,the properties of the near field diffraction of typical circular and rectangular aperture antenna are discussed, and the results analysis show that the distribution of diffraction field amplitude and phase as closely related to the shape,size of aperture and distance from observation plane to the aperture.At the end of this paper,problem about how reduce near field diffraction of aperture are discussed.

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