

数学与系统科学研究院

计算数学所学术报告

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报告题目:

**The efficient algorithm for
electromagnetic scattering by the
electrically large and multiscale
scatterers**

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报告时间: 2018年9月6日(周四)

上午 10:00-11:00

报告地点: 数学院南楼七层

702 教室

Abstract:

Fast and accurate solver of high frequency electromagnetic physical optics scattered fields is always important problems in computational electromagnetic area. Recently, we have comprehensively studied the physical optics scattered fields from the quadratic patch scatterers. On invoking the numerical steepest descent path method on the complex plane, we have calculated the high frequency physical optics scattered fields efficiently. Then, we have further applied the proposed numerical steepest descent path method to the electrically large target. Next, we have considered the diffraction problems from the electrically large scatterers. With the numerical steepest descent path method, we have achieved the improvement on the accuracies of the electromagnetic scattered fields from both the perfect conductor and dielectric scatterers. Importantly, the scattered fields from the convex scatterer, like the creeping wave fields are achieved accurately. We have then adopted the high frequency method together with the full wave integral equation method and finite element method to multiphysics calculations. Meanwhile, we have considered the periodic and quasi-periodic structures. By the integral equation method, we have calculated the electromagnetic scattered fields from the layered medium structures.

个人介绍:

吴语茂，男，分别于2010年6月和8月于中国科学技术大学和香港城市大学获得计算数学博士学位。2010年8月至2014年2月先后在香港大学和美国伊利诺伊大学香槟分校的国际计算电磁学研究中心从事博士后研究工作。研究方向包括电大目标的电磁散射高频快速算法、纳米周期材料的快速算法、逆散射和逆成像问题等。首次提出基于积分方程的算子映射推进快速算法，计算三维纳米周期结构电磁散射场，论文被遴选为美国光学会的亮点工作。

共发表学术和会议论文62篇，其中SCI论文25篇，第一作者在IEEE Trans. Antenna and Propagation, Journal of Computational Physics等杂志上发表SCI论文14篇，通讯作者论文2篇，Springer著作章节1部。曾获得复旦大学卓学人才计划，复旦大学院长奖，中科大博士求是奖等荣誉。

担任中国电子学会电磁散射与逆散射委员会委员，中国电子学会电磁兼容分会委员，国际期刊ACES《The Applied Computational Electromagnetics Society Journal Express》副主编，IJAP (International Journal of Antennas and Propagation) 客座编辑。IEEE ICCEM, IEEE IWEM 和 PIERS 会议分会场主席。

欢迎大家参加!