数学与系统科学研究院

计算数学所网络学术报告

报告人：**Prof. Oscar P. Bruno**

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报告题目：

Fast spectral integral solvers for general electromagnetic structures

邀请人： 殷涛 副研究员

报告时间：**2021 年 5 月 11 日（周二）**

上午 9:00-10:00

报告工具：**Zoom**（**ID：8865425697**）

Abstract：

We present fast spectral electromagnetic solvers that address some of the main difficulties associated with the simulation of realistic engineering electromagnetic problems in the frequency- and time-domain. Based on the use of Green functions and fast high-order methods for evaluation of integral operators, these algorithms can solve, with high-order accuracy, problems of electromagnetic propagation and scattering for large and complex three-dimensional structures and devices -- including e.g. silicon devices, structured lenses, and metamaterials. In particular, we will consider the important but challenging problem of inverse design and optimization of optical and photonic devices of large electrical sizes. A variety of applications will be presented demonstrating the significant design capabilities inherent in the new methods, as well as the improvements these algorithms can provide, over other approaches, in generality, accuracy, and speed. Time permitting, a novel class of accelerated Green function methods will be mentioned.

欢迎大家参加！