数学与系统科学研究院

计算数学所学术报告

报告人： **Dr. Wenjia Jing**

（ *Tsinghua University* ）

报告题目：

Periodic homogenization of Dirichlet problems in perforated domains: a unified proof

邀请人： 张晨松 副研究员

报告时间：**2019** 年 **4** 月 **8** 日（周一）

上午 **9:00-10:00**

报告地点： 科技综合楼三层

301 报告厅

Abstract:

In this talk, we present a unified proof to establish periodic homogenization for the Dirichlet problems associated to the Laplace operator in perforated domains; here the uniformity is with respect to the ratio between scaling factors of the perforation holes and the periodicity. Our method recovers, for critical scaling of the hole-cell ratio, the "strange term coming from nowhere" found by Cioranescu and Murat, and it works at the same time for other settings of hole-cell ratios. Moreover, the method is naturally based on analysis of rescaled cell problems and hence reveals the intrinsic connections among the apparently different homogenization behaviors in those different settings. We also show how to quantify the approach to get error estimates and corrector results.

报告人简介:

Wenjia Jing is an assistant professor at the Yau Mathematical Sciences Center of Tsinghua University. He works on partial differential equations with random coefficients, especially homogenization theory, waves in random media and their applications in inverse problems. Wenjia Jing received his PhD degree from Columbia University in 2011. From 2011 to 2013, he was a postdoctoral researcher at Ecole Normale Superieure at Paris. From 2013 to 2016, he was a Dickson Instructor of Mathematics at The University of Chicago.

欢迎大家参加！