

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:

**On the homogenization of Dirichlet  
problems in perforated domain**

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报告时间: 2017 年 9 月 28 日 (周五)

下午 15:00-16:00

报告地点: 科技综合楼三层

311 报告厅

## **Abstract:**

We consider the homogenization of Dirichlet problems for the Laplace operator in perforated domains, and present a unified approach adaptive to the ratio between the sizes of the perforating holes and the typical cells. For finite hole-cell size ratios, we adopt the standard oscillating test function method; for vanishing hole-cell size ratios, we add in the asymptotic behaviors of a properly rescaled cell problem. When the hole-cell size ratio is critically small, our method recovers “the strange term from nowhere” due to Cioranescu and Tartar; the method also reveals how this critical case intrinsically relates to the case of relatively larger holes, where the limiting equation becomes algebraic, and to the case of smaller holes, where the limiting equation ignores the holes. I will comment on quantitative estimates and on the random settings.

**欢迎大家参加！**