



北京理工大学

数学与统计学院学术报告

On Brezis' First Open Problem: A Complete Solution

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时间： 2026 年 1 月 14 日（周三上午）10:00—11:00

地点： 文萃楼D座702会议室

报告人简介： 孙黎明，博士毕业于美国Rutgers大学，现任中国科学院数学与系统科学研究院副研究员。主要从事椭圆型偏微分方程和非线性泛函分析的研究。发表学术论文10余篇，其中部分成果发表于Duke. Math. J., Adv. Math, JFA等学术刊物上。

摘要： In 2023, H. Brezis published a list of his “favorite open problems”, which he described as challenges he had “raised throughout his career and has resisted so far”. We provide a complete resolution to the first one-Open Problem 1.1-in Brezis’ s favorite open problems list: the existence of solutions to the long-standing Brezis-Nirenberg problem on a three-dimensional ball. Furthermore, using the building blocks of Del Pino-Musso-Pacard-Pistoia sign-changing solutions to the Yamabe problem, we establish the existence of infinitely many sign-changing, nonradial solutions for the full range of the parameter.