



# 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

**报告人：孙黎明 (中国科学院)**

**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.

