

报告题目: Uniqueness of least energy solution for Monge-Ampere functional

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摘要:

Let Ω be a bounded, smooth, uniformly convex domain in \mathbb{R}^n . We consider the following functional

$$\begin{equation} \label{abs1} \end{equation}$$

$$\mathcal{E}[u] = \int_{\Omega} (-u) \det D^2 u \, dx, \quad \int_{\Omega} |u|_{L^{q+1}} = 1$$

where $u \in C^2(\bar{\Omega})$ is convex and $u=0$ on $\partial\Omega$.

In this talk, the uniqueness of least energy solution of [\(1\)](#) is investigated. For $n=2$, we prove the least energy solution of [\(1\)](#) is unique for $2 < q < \infty$ provided it is locally uniformly convex; for $n \geq 2$, we prove there exists $q_0 > n$ such that the non-trivial solution of [\(1\)](#) is unique for $n < q < q_0$. In particular, for $q = \infty$, we show the uniqueness of the least energy solution of [\(1\)](#) and find its relation to Santaló point.

报告人简介:

黄耿耿, 分别于 2008 年、2013 年在复旦大学获得学士和博士学位, 自 2013 年起先后在上海交通大学、台湾大学、澳大利亚国立大学作博士后研究, 2017 年 9 月起任教于复旦大学数学科学学院。黄教授的主要研究领域非线性偏微分方程。在 *Communications on Pure and Applied Mathematics*, *International Mathematics Research Notices*, *Journal of Differential Equations*, *Communications in Partial Differential Equation*, *Indiana University Mathematical Journal* 等国际知名学术期刊上发表论文 10 余篇。