Bernoullis Tafelrunde

Graduate Student Seminar

Wednesday, 12 April 2017, 12:15-13:00
Seminarraum 05.002, Spiegelgasse 5

Ali Hyder

Universität Basel

Liouville type equation on $\mathbb{R}^n$

Abstract

I will talk about the existence of solution to the problem

$$(-\Delta)^{\frac{n}{2}}u = e^{nu} \quad \text{in } \mathbb{R}^n, \quad V_{n,u} := \int_{\mathbb{R}^n} e^{nu}dx < \infty.$$

I will show that a necessary and sufficient condition for the existence of a solution u is the following:

$$V_{2,u} = 4\pi, \quad V_{n,u} \in (0, V_n] \text{ for } n = 3, 4 \quad \text{and } V_{n,u} \in (0, \infty) \text{ for } n \geq 5,$$

where V_n is a positive constant.