Asymptotic behaviour of large solutions for a critical problem in two dimensions

Jacques Giacomoni,

SUMMARY

In this talk, I will present recent contributions about the following critical semilinear elliptic problem in 2-dimensions:

$$(P_\lambda) \begin{cases} -\Delta u = \lambda h(u)e^{u^2}); \text{ in } \Omega \subset \mathbb{R}^2 \\ u|_{\partial\Omega} = 0 \ , \ u > 0 \ \text{ in } \Omega \end{cases}$$

where Ω is a smooth bounded domain and $\lambda > 0$. Precisely, regarding the different classes of perturbation term h, I will show existence of singular solutions, uniqueness of large solutions, instability of solutions. These results have been obtained in collaboration with: ADIMURTHI, B. BOUGHERARA and S.K. PRASHANTH.

Keywords: critical elliptic problem, Trudinger-Moser embedding, singular solutions,. . .

AMS Classification: 35J20

[1]Department LMAP-UMR 5142
 Université Pau et des Pays de l'Adour
 Bat. IPRA, avenue de l'Universit 64013 Pau Cedex
 `jgiacomo@univ-pau.fr`