UNIVERSIDADE DE LISBOA
CENTRO DE MATEMÁTICA E APLICAÇÕES FUNDAMENTAIS
Av. Prof. Gama Pinto 2, 1649-003 LISBOA, PORTUGAL Tel. (351) 217 904 700 FAX (351) 217 954 288

Mês de: Abril 2011

SEMINÁRIO DE ANÁLISE E EQUAÇÕES DIFERENCIAIS

Dia 7 de Abril (quinta-feira), às 14h30, na Sala B3-01

"Analysis of travelling waves to a nonlinear flux limited reaction-diffusion equation"

Juan Campos

(Universidad de Granada)

Abstract:

Let us consider the following parabolic equation

$$\partial_t u = \partial_r \left(\frac{u \partial_r u}{\sqrt{u^2 + \frac{(\partial_r u)^2}{c^2}}} \right) + \alpha u(1-u),\ 0 \leq u \leq 1,$$

where $c > 0$ and $\alpha > 0$ are two constants. From the elliptic part is known that any solution with a compact supported initial data, increases its support with a speed c. This implies that the real speed of propagation σ^* is less than c. Depending on α it is possible that this innequality is strict. This means that outside of a moving region that increases with speed $\sigma > \sigma^*$ the solutions are exponentially small. We will prove this fact using the traveling wave aproach. We will show also the connection of this fenomena with the regularity of the minimal speed travelling wave

Parcialmente suportado pela FCT ao abrigo do Financiamento Base

Local:
COMPLEXO INTERDISCIPLINAR
Av. Prof. Gama Pinto, 2
1649-003 Lisboa