

Faculdade de Ciências da Universidade de Lisboa
cmafcio@fc.ul.pt Tel. (+351) 21 750 00 27

SEMINÁRIO DE ANÁLISE E EQUAÇÕES DIFERENCIAIS

Dia 7 de Abril (quinta-feira), às 13H30, na sala 6.2.33

Analytic and geometric properties of functions with dislocations singularity

Riccardo Scala
(Weierstrass Institute (WIAS), Berlin)

Abstract:

We study the nature of the singularities of the strain fields due to the presence of dislocations in a crystal. We prove and collect some measure theoretic properties of such singularities. Among them, we give the explicit description of the boundary of the graph defined by deformation fields, which, in the presence of dislocations, are well-defined as torus-valued maps. Using such description we are able to deal and solve some variational problems involving such maps, as, for instance, problems of minimization of energies depending on the elastic strain and the dislocation density as well.

*Seminário financiado por Fundos Nacionais através da FCT – Fundação para a Ciência e a Tecnologia
no âmbito do projeto UID/MAT/04561/2013*

Faculdade de Ciências da Universidade de Lisboa
cmafcio@fc.ul.pt Tel. (+351) 21 750 00 27

SEMINÁRIO DE ANÁLISE E EQUAÇÕES DIFERENCIAIS

Dia 7 de Abril (quinta-feira), às 14H15, na sala 6.2.33

L^p -Continuity of Solutions to Parabolic Free Boundary Problems

E. Zaouche

(Ecole Normale Supérieure, Algeria)

Abstract:

We consider a class of parabolic free boundary problems. We establish some properties of the solutions, including L^∞ -regularity in time and a monotonicity property, from which we deduce strong L^p -continuity in time.

Key-words:

Free boundary problem, parabolic equation, monotonicity, regularity.

*Seminário financiado por Fundos Nacionais através da FCT – Fundação para a Ciência e a Tecnologia
no âmbito do projeto UID/MAT/04561/2013*