

abstract

GEOMETRIC PDE SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

We address the problem of building a body of specified shape and of specified mass, out of materials of varying density so as to minimize the first Dirichlet eigenvalue. It leads to a free boundary problem and many uniqueness questions, The regularity of the free boundary and optimal regularity of the solution then depends on blow-up analysis and a monotonicity formula. Full regularity of the free boundary so far has only been achieved in dimension two where the tangent cones obtained via blow-up are seen to be unstable. This is in part joint work with C. Kenig and Tung To.