Existence results for a class of dimensional nonlocal semilinear problems

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Abstract

Motivated by some problems arising in Onsager vortex model, or in some aggregation model in mathematical biology, we are led to consider a class of two dimensional nonlinear and nonlocal PDE’s. This family of problems has some similarity with the problem of prescribing Gauss curvature on a surface. The main difficulty to detect solutions, is the lack of compactness of the associated functional. I will explain how this can be overcome by considering an appropriate deformation flow, which allows to develop a Morse theory.

Wednesday, 7 December 2011
4:00 pm
Smith Hall 204
Tea and refreshments will be served at 3:45pm.

http://math.newark.rutgers.edu/~xiaowwan/Colloquium/