basque center for applied mathematics

Working Seminar
(APDE - Analysis of Partial Differential Equations
HA – Harmonic Analysis)

Wednesday, November 21st, 12:00
Seminar room of the Mathematics Department at UPVEHU (Leioa campus)

Anudeep Kumar Arora
Florida International University (USA)

SINGULARITIES AND GLOBAL SOLUTIONS IN THE SCHRÖDINGER HARTREE EQUATION

We consider a nonlinear Schrödinger type equation with nonlocal nonlinearity, of a convolution type, called the generalized Hartree equation. In the focusing case we investigate global behavior of solutions and formation of stable singularities. In the inter-critical regime we first obtain a dichotomy for global vs finite time existing solutions exhibiting two methods of obtaining scattering: one via Kenig-Merle concentration - compactness and another one is using Dodson-Murphy approach via Morawetz on Tao's scattering criteria.

Next, we investigate stable blow-up solutions in a critical regime and describe the blow-up dynamics, which is similar to NLS. This work is a part of the PhD dissertation under the supervision of Svetlana Roudenko.

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EXCELENCIA SEVERO OCHOA

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