SEMINARIO EDP

Expositor: Miguel Angel Alejo

Title: Stability of nonlinear patterns in low dimensional Bose gases

Abstract: In this talk I will present recent results, obtained in collaboration with prof. A. Corcho (UFRJ, Brazil), on the rigorous study of the orbital stability properties of the simplest nonlinear pattern in low dimensional Bose gases, the black soliton solution. This is a solution of a non-integrable defocusing Schrödinger model, represented by the quintic Gross-Pitaevskii equation (5GP). Once the black soliton is characterized as a critical point of the associated Ginzburg-Landau energy of the 5GP, I will show some coercivity properties of that energy around the black (and dark) soliton. I will also explain how to impose suitable orthogonality conditions and how to control the growth of some modulation parameters to finally prove that perturbations generated by the symmetries of the 5GP stay close to the black soliton in the energy space.

Expositor: Jean-Claude Saut

"Long time existence for some Boussinesq type systems"

We establish the long time existence of solutions to the Cauchy problem for two type of Boussinesq systems.
One is a strongly dispersive Boussinesq system whose phases have a non trivial zero set, necessitating the use of normal forms. The second one is a class of "Full Dispersion-Boussinesq" systems arising in the modeling of internal waves in a two-layers system.

Based on joint work with Li Xu.

Miércoles 27 de noviembre de 2019 a las 15:00 hrs. la Sala de Seminario Felipe Álvarez Daziano, 5to piso, Torre Norte de Beauchef 851.