

CMM PDE Seminar

Speaker: André de Laire (University of Lille, Francia)

Title: On traveling waves for the Gross-Pitaevskii equations.

Abstract: In this talk, we will discuss some properties of traveling waves solutions for some variants of the classical Gross-Pitaevskii equation in the whole space, in order to include new physical models in Bose-Einstein condensates and nonlinear optics.

We are interested in the existence of finite energy localized traveling waves solutions with nonvanishing conditions at infinity, i.e. dark solitons.

After a review of the state of the art in the classical case, we will show some results for a family of Gross-Pitaevskii equations with nonlocal interactions in the potential energy, obtained by variational techniques. Then, we will discuss the existence and behavior of the dark solitons for the Gross-Pitaevskii equation is a strip, according to its width.

This is joint work with Philippe Gravejat, Salvador Lopez-Martinez, and Didier Smets.

Tuesday, January 3, 2022 at 12 Santiago time

To be held in person at **Sala de seminarios DIM, 5th floor**, Beauchef 851, and online via zoom:
<https://uchile.zoom.us/j/93440662992?pwd=Z3RkckJaeElKQnVUZjNnNXpVcXJadz09>

For further information, see our webpage: <https://eventos.cmm.uchile.cl/pdeseminar/>

