

## Seminar EDPs

**Speaker:** José M. Palacios (**U. Tours**).

**Title:** Orbital (in)stability of periodic wave solutions for  $\phi^{4n}$ -models.

**Abstract:** In this talk we shall discuss the orbital stability/instability of periodic wave solutions to the general  $\phi^{4n}$ -models, for all  $n \in \mathbb{N}$ . These models are (physically meaningful) generalizations of the classical  $\phi^4$  model in quantum field theory. In the case  $n=1$ , we shall see that several different explicit solutions can be obtained by direct computations. However, for  $n>1$  periodic solutions are no longer explicit. Thus, for the general case ( $n>1$ ), due to the lack of explicit formulas, together with the complexity in dealing with the nonlinearity, in order to prove that we are under the general framework of Grillakis-Shatah-Strauss (and hence to conclude orbital in/stability), and to give proper spectral properties of the corresponding linearized operators, we shall need to exploit several combinatorial arguments as well as general ODE results. Part of this work is in collaboration with Gong Chen (Fields Institute).

**Martes 29 de septiembre a las 4pm vía zoom en**

<https://uchile.zoom.us/j/88121344517?pwd=aHYreWlyWDBGcVUxdGNMZjN2SzNFZz09>  
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