

**SEMINAR**

**CAPDE de EDPs**

**Expositor**

**Claudio Muñoz (CNRS and DIM, U. de Chile )**

**Title**

**Breathers and the dynamics of solutions to the KdV type equations**

**Abstract:**

Our first aim is to identify a large class of non-linear functions  $f(\cdot)$  for which the IVP for the generalized Korteweg-de Vries equation does not have breathers or "small" breather solutions. Also we prove that all small, uniformly in time  $L^1 \cap H^1$  bounded solutions to KdV and related perturbations must converge to zero, as time goes to infinity, locally in an increasing-in-time region of space of order  $t^{1/2}$  around any compact set in space. This set is included in the linearly dominated dispersive region  $x \ll t$ . Moreover, we prove this result independently of the well-known supercritical character of KdV scattering. In particular, no standing breather-like nor solitary wave structures exists in this particular regime.

This is joint work with Gustavo Ponce.

**Lunes 01 de Octubre a las 17:00 hrs, en el Auditorio del Departamento de Matemática y Ciencia de la Computación. Está ubicado en el piso -1 del departamento (Las Sophoras n°175, Estación Central).**