

SEMINAIRE D'ANALYSE

➤ **VENDREDI 10 MARS 2017 à 14h15 - salle MA A3 31**



Professeur Enrique ZUAZUA (Universidad Autónoma de Madrid, Espagne) donnera une conférence sur le thème:

« Control of PDE's involving non-local terms »

Abstract: In this talk we present recent work in collaboration with U. Biccari, Q. Lü and E. Fernández-Cara on the controllability of linear PDE models involving non-local terms. We first describe how multiplier techniques can be adapted to handle wave-like models. We then consider more general models involving lower order space-like non-local terms. Under some analyticity assumptions on the corresponding convolution kernel, we show that the equations are controllable, using a perturbation argument: Controllability properties of the underlying PDE's are transferred to the model involving the non-local term. We also consider models involving time fractional derivatives, which introduce non-local timelike terms. We show that classical controllability properties fail because of the underlying memory effects, very much as in the context of viscoelasticity, as pointed out by Ph. Martin, L. Rosier and P. Rouchon. Some possible extensions and open problems concerning other nonlocal systems are presented.

Lausanne, le 27 février 2017
BD/HMN/MM

Les séminaires qui ont lieu à la Section de Mathématiques sont annoncés sur Internet
<http://memento.epfl.ch/mathis/>