

Inverse source problems for some evolution PDEs

Yavar Kian

Aix-Marseille Université
yavar.kian@univ-amu.fr

Abstract

We consider some inverse source problems, related to the recovery of a source term F appearing in the damped wave equation

$$\partial_t^2 u(t, x) + \rho(x) \partial_t^{\alpha(x)} u(t, x) - c(x) \Delta u(t, x) = f(t, x), \quad (t, x) \in (0, T) \times \Omega,$$

with $T \in (0, +\infty]$, Ω a domain of \mathbb{R}^n , $n \geq 2$, $\alpha : \Omega \rightarrow (0, 2)$ a function and ∂_t^α corresponding to the usual derivative when $\alpha = 1$ and to the fractional derivative in the Caputo sense of order α when $\alpha \neq 1$. This talk is based on some joint work with Guanghai Hu, Eric Soccorsi and Masahiro Yamamoto.