

Exact boundary controllability of semilinear wave equations

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In this talk, we address the exact controllability of the semilinear wave equation $\partial_{tt}y - \Delta y + f(y) = 0$ posed over a bounded domain Ω of \mathbb{R}^d with initial data in $L^2(\Omega) \times H^{-1}(\Omega)$. We focus on the existence of a Dirichlet boundary control for the equation under a growth condition at infinity on the nonlinearity f of the type $r \ln^p r$, with $p \in [0, 3/2)$. This result is based on a Schauder fixed-point argument. Then, assuming additional assumptions on f' , we consider the approximation of a control function.

This is a joint work with Arnaud Münch and Jérôme Lemoine.

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