

Séminaire de mathématiques et leurs applications

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Title: Sharp minimal time for the observability of Grushin-type equations.

Abstract: In this talk, I will present new results regarding the observability properties (and by duality, the controllability properties) of Grushin-type equations. It is by now well-known that for this type of degenerate parabolic equations, some geometric conditions are needed to get observability properties, contrarily to the usual parabolic equations.

We have recently provided the minimal time of observability in several geometrical configurations. I'll present some of these results, focusing on a two-dimensional configuration for the proofs. Our main strategy relies on a Fourier expansion, and a precise estimate of the asymptotic of the cost of observability in the Fourier parameters obtained via Carleman estimates, combined with the rate of dissipation of each of these equations.

This is a joint work with Karine Beauchard and Sylvain Ervedoza.