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Wellposedness, control, and observability theories for partial differential equations

A Weird Pattern for Disparate Linear PDEs with Boundary Control

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Abstract: The talk will deal with an unusual and yet recurring abstract dynamics which naturally arises from the modeling and boundary control of certain PDEs, ranging from parabolic-like equations to hyperbolic ones, and even to certain coupled systems of hyperbolic-parabolic PDEs. While different solutions to the optimal quadratic cost problem have been proposed in the nineties, specifically tailored to a PDE whose free dynamics is described by an analytic semigroup, novel conceptual and technical difficulties arise in the study of other PDE problems which comprise hyperbolic components. A specific PDE model and its associated analysis will be discussed.