Abstract

Oberwolfach Workshop:

Control Methods in Hyperbolic Partial Differential Equations

Dates:

5 Nov - 11 Nov 2023   (Code: 2345)

Organizers:

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Control of hyperbolic partial differential equations (PDEs) is a truly interdisciplinary area of research in applied mathematics nurtured by challenging problems arising in most modern applications ranging from road traffic, gas pipeline management, blood circulation, to opinion dynamics and socio-economical models, as well as in environmental and biological issues, or more recently in the analysis of deep learning and machine learning methods.

The topic has gained an increasing attraction of researchers in the last twenty years due to fundamental theoretical as well as numerical advances achieved in the field of nonlinear hyperbolic PDEs. The hyperbolic and the control of PDEs communities, while pursuing separate interests in their respective range of action with a different focus and, often, with a different array of technical tools, do share a substantial body of common knowledge and background.

We think the time is right and the momentum is propitious to bring those communities together at a joint workshop, to mutually stimulate each other and interact with one another, for a marked advancement of this area of research on a broad spectrum of control ranging from theoretical to numerical problems and covering also the emerging challenges involving the interplay between (topics of) control and learning. In order to also attract young scientists to this striving field we focus on selected lectures, in-depth discussions, transfer of information from senior to young researchers, and vice versa, and invited plenary talks.