

Real Time Control of PDE Systems

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Abstract: A general concept for real time control of PDE systems will be presented. It utilizes suboptimal variants of receding horizon control techniques and contains the well known instantaneous control method [1, 2] as special case. The approach has in common the key idea with other real time control concepts: Feed back control information into the system as soon as it is available.

The approach in a natural way provides a recipe for the construction of feedback control policies for nonlinear systems of PDEs, including the Navier-Stokes equations [1]. It further is amenable for equality and inequality constraints.

In my talk I will sketch the construction recipe, and the proof of the stabilizing character of related closed-loop feedback control laws. Furthermore, I will present several numerical examples which will highlight the theoretical investigations.

Bibliography

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