Remarks on the internal exponential stabilization to a nonstationary solution for 1D Burgers equations

Axel Kröner, INRIA Saclay, Palaiseau, France

Sergio S. Rodrigues, RICAM, Linz, Austria

The feedback stabilization of the Burgers system to a nonstationary solution using finite-dimensional internal controls is considered. Estimates for the dimension of the controller are derived. In the particular case of no constraint on the support of the control, a better estimate is derived and the possibility of getting an analogous estimate for the general case is discussed; some numerical examples are presented illustrating the stabilizing effect of the feedback control and suggesting that the existence of an estimate in the general case analogous to that in the particular one is plausible.

Références

[1] A. Kröner and S.S. Rodrigues, *Remarks on the internal exponential stabilization to a nonstationary solution for 1D Burgers equations*, SIAM J. Control Optim., 53, 1020-1055, 2015.

[2] V. Barbu, S. S. Rodrigues, and A. Shirikyan, *Internal exponential stabilization to a nonstationary solution for 3D NavierStokes equations*, SIAM J. Control Optim., 49, 1454-1478, 2011,

Axel Kröner, INRIA Saclay and CMAP, École polytechnique, 91128 Palaiseau, France
axel.kroener@inria.fr
Sergio S. Rodrigues, Johann Radon Institute for Computational and Applied Mathematics, Austria
sergio.rodrigues@oeaw.ac.at