

报告题目: Quantitative rapid stabilization of some PDE models 报告人: Shengquan Xiang (Peking University) 时间: 2022-11-18 星期五 10:00-11:30 地点: 腾讯会议: 746-789-614

报告摘要:

Quantitative stabilization is an active research topic in PDEs' control theory, namely to construct explicit feedback laws as control to make the closed-loop system stable together with quantitative estimates. In this presentation we will talk about some recent progress in this topic. In the first part we will present Frequency Lyapunov method on stabilizing parabolic equations including the heat equation and Navier-Stokes equations. This method combines Lyapunov technique and spectral inequality, while the resulted quantitative estimates also allow us to obtain finite time stabilization. The second part is on Fredholm backstepping method. Introduced by Coron and Lü in 2013, this method has been adapted on various models in the last decade. However, the classical approach admits a strict limitation on the order of operators, and it was open to know whether this constructive method can be applied on low order operators including water waves. Together with Ludovick Gagnon, Amaury Hayat and Christophe Zhang, we have solved this open problem on water waves.

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