

Infinite-dimensional input-to-state stability and Orlicz spaces

Prof. Dr. Birgit Jacob (Bergische Universität Wuppertal)

We study the relation between input-to-state stability and integral input-to-state stability for linear infinite-dimensional systems with an unbounded control operator. We show that integral input-to-state stability can be characterized in terms of input-to-state stability with respect to Orlicz spaces. Since we consider linear systems, the results can also be formulated in terms of admissibility. For parabolic diagonal systems with scalar inputs, both stability notions with respect to L^∞ are equivalent.