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## Infinite-dimensional input-to-state stability

**Abstract**

In this talk we discuss infinite-dimensional versions of well-known stability notions relating the external input $u$ and the state $x$ of a linear system governed by the equation

$$\dot{x} = Ax + Bu, \quad x(0) = x_0.$$

Here, $A$ and $B$ are unbounded operators. For instance, the system is called *$L^p$-input-to-state stable* if

$$u(\cdot) \mapsto x(t)$$

is bounded as a mapping from $L^p(0,t)$ to the state space $X$ for all $t > 0$. In particular, we elaborate on the relation of this notion to *integral input-to-state* stability and *(zero-class) admissibility* with a special focus on the case $p = \infty$.
This is joint work with B. Jacob, R. Nabiullin and J.R. Partington.

Talk time: 07/18/2016 5:30PM— 07/18/2016 5:50PM
Talk location: Cupples I Room 113

Special Session: State space methods in operator and function theory. Organized by J. Ball and S. ter Horst.