

Asymptotic stability for the Lipschitzian trajectories of periodic evolutionary families

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It is known that any strongly continuous semigroup $\{T(t)\}_{t \geq 0}$ that acts on a complex Hilbert space H is uniformly exponentially stable if and only if for each vector b in H the solutions of the following Cauchy problems associated with its generator A ,

$$\begin{cases} u'(t) &= Au(t) + e^{i\mu t}b, & t \geq 0, & \mu \in \mathbb{R}, \\ u(0) &= 0, \end{cases}$$

are uniformly bounded with respect to the parameter μ .

We will review some results of this type for periodic evolution families and will highlight some open issues.