STABILITY FOR REGULARIZED RESOLVENTS

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ABSTRACT. We study the long time behavior of solutions of the evolution equation of Volterra type $u(t) = A(a*u)(t) + f(t)$, $(t \geq 0)$, where A is a closed linear operator on a Banach space X, and $a \in L^1_{loc}(\mathbb{R}_+)$, and $f : [0, \infty) \to X$ is continuous. If $R(t)$ is the (a, k) regularized resolvent associated to the above integral equation, then we determine the stability of solutions by means of Tauberian theorems associated to $R(t)$. We discuss several examples which illustrate the results.

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