

# DUALITY PROPERTIES FOR REGULARIZED RESOLVENTS

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## ABSTRACT

We give a characterization for the infinitesimal generator associated to an  $(a, k)$  regularized resolvent  $R(t)$ . We introduce various spaces which in turn, are the natural extension of the corresponding well known spaces in the semigroup case. Then we study the behavior of the dual operator solution for the equation  $u(t) = f(t) + (a * Au)(t)$ ,  $a \in L^1_{loc}(\mathbb{R}_+)$  in a Banach space.

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