# EXISTENCE IN THE $\alpha$-NORM FOR NONLINEAR VOLTERRA <br> INTEGRODIFFERENTIAL EQUATIONS WITH NONLOCAL CONDITIONS 

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## Abstract

In this paper, we study the existence of the following abstract Cauchy problem with nonlocal conditions on a Banach space $X$.

$$
\left\{\begin{array}{l}
u^{\prime}(t)=-A u(t)+\int_{0}^{t} K(t, s, u(s)) d s+f(t), \quad t \in[0, T], \\
u(0)+g(u)=u_{0}
\end{array}\right.
$$

By using Schauder fixed point theorem and Sadovskii fixed point theorem, we find the existence of solutions. An example is presented in the end to show the application of obtained results.

Keywords and phrases: Volterra integrodifferential equation, nonlocal condition, $C_{0}$-semigroup.

