On some fractional evolution equation with nonlocal conditions

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In this paper, Leray-Schauder principle is used to establish existence results for the nonlocal initial value problem of the following type

$$\frac{d^{\alpha}u(t)}{dt^{\alpha}} = Au(t) + f(t, B(t)u),\ t > 0$$
$$u(0) = u_o + g(u).$$

Here $0 < \alpha \leq 1$, A is the infinitesimal generator of a strongly continuous semigroup of bounded operators $Q(t)$ in the Banach space E, $\{B(t) : t > 0$ is a family of linear closed operator defined on a dense set in E into E and f, g are given E-valued functions.