On the integro-differential equations with reflection

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Abstract

There are a few purely periodic phenomena in nature, which allows one to consider several other generalizations, such as almost automorphic and measure pseudo almost automorphic oscillations. In this paper, by developing important properties on the composition of functions with reflection, using some exponential dichotomy properties and an application of the fixed-point theorem, several new sufficient conditions for the existence and the uniqueness of an pseudo almost automorphic solutions with measure for some general type reflection integro-differential equations. We suppose that the nonlinear part is measure pseudo almost automorphic and in which we distinguish the two constant and variable cases for the lipschitz coefficients of the functions associated with this part. It is assumed that the linear part of the equation considered admits an exponential dichotomy. Finally, an application is given on the very interesting model of Markus and Yamabe.

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