A VARIATIONAL APPROACH FOR ALMOST PERIODIC SOLUTIONS IN RETARDED FUNCTIONAL DIFFERENTIAL EQUATIONS

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Abstract. To study the a.p. (almost periodic) solutions of retarded functional differential equations in the form $u''(t) = \int_{0}^{\infty} D_{1} f(u(t), u(t+\theta))d\theta + \int_{0}^{\infty} D_{2} f(u(t-\theta), u(t))d\theta + e(t)$, we introduce variational formalisms to characterize the a.p. solutions as critical points of functionals defined on Banach spaces of a.p. functions. We obtain an existence result of weak a.p. solutions and a result of density of the a.p. forcing terms $e(.)$ for which the equation possesses usual a.p. solutions.


Keywords and phrases: Retarded functional differential equations, almost periodic functions, variational method.

REFERENCES


