

**NONTRIVIAL SOLVABILITY OF A CLASS OF
NONLINEAR INTEGRO-DIFFERENTIAL
EQUATIONS OF SECOND ORDER***Kh. A. Khachatryan*

The article is devoted to the study of nontrivial solvability and the asymptotic behavior of solutions for some classes of nonlinear integro-differential equations with a noncompact operator in a special case. Combining special factorization methods with the methods of the theory of linear integral equations of convolution type, we prove existence theorems for these classes of equations. With the help of a priori estimates, we calculate the limits of solutions obtained at infinity. The examples exhibited in the article are of mathematical interest in their own right. They are particular cases of the equations considered and have important applications in quantum mechanics.

Key words and phrases: factorization, Carathéodory condition, convergence of iterations, the limit of a solution.

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