

Spectral analysis and representations of solutions of abstract integro-differential equations in a Hilbert space

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We obtain and study the representations of the solutions of certain classes of abstract integro-differential equations in a Hilbert space as a series of exponentials on the base of the structure and asymptotic of spectra of the operator-valued functions which are the symbols of these equations. These integro-differential equations arise in the theory of heat propagation in media with memory, viscoelasticity etc.