Formal adjoint theory and asymptotic formula of solutions of integral equations with infinite delay

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An explicit asymptotic formula of solutions of a linear autonomous integral equation with infinite delay is established. The proofs are based on developing the spectral analysis for the generator of the solution semigroup as well as the one for the formal adjoint operator associated with the generator. It should be noticed that Relation (3.59) in [1] also gives a nice formula for the asymptotic behavior of solutions of the equation. We emphasize that our asymptotic formula is written in a more explicit form than Relation (3.59) in [1]. Each term in our formula is computable systematically. This is a joint work with Satoru Murakami and Yutaka Nagabuchi.

References

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[2] *H. Matsunaga, S. Murakami, N. V. Minh*: Decomposition and variation-of-constants formula in the phase space for integral equations. Funkc. Ekvacioj, Ser. Int. *55* (2012), 479–520.