

CONCLUSIONS

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In conclusion, we noted the following cases:

- 1) It has been proved that essentially all linear polynomial processes which give a good approximation of integrable functions, can be successfully applied to obtain algorithms or methods for good approximation by polynomials of integrable solutions (unknown to us) of Fredholm, Volterra and mixed additive integral equations of the second kind in the periodic case of period 2π .

- 2) By means of linear polynomial operators, it was found a general method for computing the approximate evaluation to the resolvents of Fredholm, Volterra and mixed additive linear integral equations of the second kind.

- 3) The linear methods are appropriate to use depending on the smoothness of the solution which is determined to a considerable degree by properties of the free term. From the smoothness of the free term and the kernel, the degree of smoothness of the solution can be deduced, and subsequently, one can effectively estimate the quantity $||\phi(x) - U^n(\phi; x)||_{L_p}$.
- 4) It was noted that the assumption of the solution in the form:

$$\psi^n(x) = f(x) + \int_0^{2\pi} U^n[F(\cdot, y); x] \psi^n(y) dy,$$

gives best results in the case of Dirichlet's method rather than the solution in the form: