on the appoximate solutions of the fredholm and volterra integral equations

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In conclusion, we noted the following cases:1) It has been proved that essentially all linearpolynomial processes which give a good approximationof integrable functions, can be successfully appliedto obtain algorithms or methods for good approximationby polynomials of integrable solutions (unknown to us)of Fredholm, Volterra and mixed additive integralequations of the second kind in the periodic case ofperiod 2”.2) By means of linear polynomial operators, it wasfound a general method for computing the approximateevaluation to the resolvents of Fredholm, Vo~terra andmixed additive linear integral equations of the secondkind.3) The linear methods are appropriate to use dependingon the smoothness of the solution which is determinedto a considerable degree by properties of the free term.from the smoothness of the free term and the kernel, thedegree of smoothness of the solution can be deduced, andsubsequently, one can effectively estimate the quantityII eI>(x) -Un eel>;x) II Lp4) It was noted that the assumption of the solutionin the form:.~n(x) = f(x) +gives best results in the case of Dirichlet’s method ratherthan the solution in the form:~n(X) = fn(x) +2”f oBut in general the solution wn(x) is not polynomial unlessf(x) is polynomial whereas the solution ~n(x) is polynomial.5) Similar results to all previously mentioned can beobtained also in the application of thefirst kind and nonperiodiccase(§3.4 and §3.5).6) As a whole, it is very important to show that thisstudy can be similary carried out in other studies such asordinary differential equations, singular integral equations,linear and nonlinear integro-differential equations ofvarious types.