

On some iterative methods for Fredholm integral equations

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This talk deals with the numerical solution of Fredholm integral equations of the second kind,

$$f(y) + \int_{\mathcal{D}} k(x, y) f(x) d\mu(x) = g(y), \quad y \in \mathcal{D},$$

where the kernel k and right-hand side function g are given, the function f is to be determined, and $d\mu(x)$ is a nonnegative measure supported on a bounded or unbounded domain $\mathcal{D} \subset \mathbb{R}$.

Several iterative methods based on averaged Gauss quadrature formulae [2, 3] are proposed for the computation of Nyström interpolants and numerical tests are given to show the performance of such methods.

References

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- [3] M. M. Spalević, *On generalized averaged Gaussian formulas*, Math. Comp. 76 (2007), pp. 1483–1492.