Some Nyström methods for systems of Fredholm integral equations

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In this talk we propose Nyström methods to solve systems of Fredholm integral equations on bounded and unbounded intervals. We prove that such methods are stable and convergent. We give error estimates in weighted spaces of continuous functions equipped with uniform norms. Moreover we show some numerical tests that confirm the theoretical estimates.

The talk is based on joint work with C. Laurita and G. Mastroianni.

References

[1] M.C. De Bonis, C. Laurita, C.: Numerical treatment of second kind Fredholm integral equations systems on bounded intervals, Journal of Computational and Applied Mathematics, 217 (2008), 64-87.

[2] M.C. De Bonis, G. Mastroianni, Nyström method for systems of integral equations on the real semiaxis, to appear in IMA Journal on Numerical Analysis.