A MODIFIED PROJECTION METHOD FOR EQUATIONS OF THE SECOND KIND: CORRIGENDUM AND ADDENDUM

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The author would like to correct an error in the statement of a result [in Bull. Aust. Math. Soc. 36 (1987) 485-492] and also to incorporate an additional result.

In Theorem 2.2(3) it is stated that if \( T \) is a compact self adjoint operator on a Hilbert space and \( \pi_n \)'s are orthogonal projections, then the Kantorovich approximation \( x^K_n \), Sloan approximation \( x^S_n \) and the modified projection approximation \( x^M_n \) are of the same order. That this is not correct was pointed out to the author by Professor I.H. Sloan. The correct statement is the following:

**THEOREM 2.2.(3).** If \( T \) is a compact self adjoint operator, then the orders of convergence of \( x^K_n \), \( x^S_n \) and \( x^M_n \) are at least \( \varepsilon_n = \min\{\|R^K_n\|, \|R^S_n\|\} \), where \( R^A_n x = x - x^A_n, A \in \{K, S\} \), that is, there exists a constant \( c > 0 \) such that

\[
\|x - x^K_n\| \leq c \varepsilon_n, \quad \|x - x^S_n\| \leq c \varepsilon_n \quad \text{and} \quad \|x - x^M_n\| \leq c \varepsilon_n.
\]

From the definition \( x^K_n \) and \( x^M_n \) we note that

\[
(1 - \pi_n T)(x - x^K_n) = (1 - \pi_n)T x = (1 - \pi_n)(x^K_n) = (1 - \pi_n)(x - x^M_n),
\]

so that along with Theorem 2.1, we obtain:

**THEOREM.** There exist positive constants \( c_1 \) and \( c_2 \) such that

\[
c_1 \|x - x^K_n\| \leq \|x - x^M_n\| \leq c_2 \max\{\|x - x^K_n\|, \|x - x^S_n\|\}.
\]

Thus whenever \( x^S_n \) is better than \( x^K_n \), \( x^M_n \) and \( x^K_n \) have the same order of convergence.

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