

Erratum

Mann Iteration Converges Faster than Ishikawa Iteration for the Class of Zamfirescu Operators

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Received 24 July 2006; Revised 21 September 2006; Accepted 23 October 2006

The aim of this erratum is to make necessary corrections in the proof of Theorem 2.1 of Babu and Prasad (2006).

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The paper by Babu and Prasad [1] contains some mistakes in the proof of Theorem 2.1. In this erratum, we make the necessary corrections.

We follow the same notation as in [1].

In the statement of Theorem 2.1, we assume that $x_0 = y_0 \in K$.

Beginning with (2.1) and applying the technique as in the proof of Theorem 2.1 in [1], we can show that

$$\|x_{n+1} - p\| \leq a_n \|x_0 - p\|, \quad (1)$$

where $a_n = \prod_{k=0}^n [1 - \alpha_k(1 - \delta)]$, $n = 0, 1, 2, \dots$; and also we can show that

$$\|y_{n+1} - p\| \leq b_n \|y_0 - p\|, \quad (2)$$

where $b_n = \prod_{k=0}^n [1 - \alpha_k(1 - \delta)^2]$, $n = 0, 1, 2, \dots$.

We observe that

$$\frac{1 - \alpha_k(1 - \delta)}{1 - \alpha_k(1 - \delta)^2} \leq 1 - \alpha_k\delta(1 - \delta), \quad k = 0, 1, 2, \dots, \quad (3)$$

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so that

$$\frac{a_n}{b_n} \leq \prod_{k=0}^n [1 - \alpha_k \delta (1 - \delta)], \quad n = 0, 1, 2, \dots \quad (4)$$

Thus, $\lim_{n \rightarrow \infty} (a_n/b_n) = 0$.

Note that $a_n \rightarrow 0$ and $b_n \rightarrow 0$ as $n \rightarrow \infty$.

Acknowledgments

The authors are grateful to Professor Xue Zhiqun, for bringing out to the notice of the mistakes in the paper. This work is partially supported by U. G. C. Major Research Project Grant no. F. 8-8/2003 (SR). One of the authors (G. V. R. Babu) thanks the University Grants Commission, India, for the financial support.

References

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