

**SOME SURJECTIVITY CONDITIONS FOR NONLINEAR
ACCRETIVE TYPE SINGLE-VALUED OPERATORS
WITH A CLOSED RANGE IN BANACH SPACES**

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Abstract. Our aim in this paper is to establish some new surjectivity conditions and study the existence of solutions of equation $Tx = f$ for operators T in a Banach space X that satisfy a general type of accretive condition.

Key Words and Phrases: Surjectivity conditions, nonlinear, accretive type, single-valued operators, closed range.

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REFERENCES

- [1] A.G. Kartatos, *Mapping theorems involving compact perturbations and compact resolvents of nonlinear operators in Banach spaces*, J. Math. Anal. Appl., **80**(1981), 130-146.
- [2] M.O. Osilike, *Iterative solution of nonlinear equations of the φ -strongly accretive type*, J. Math. Anal. Appl., **200**(1996), 259-271.
- [3] Z. Liu and S.M. Kang, *Convergence theorems for φ -strongly accretive and φ -hemi-contractive operators*, J. Math. Anal. Appl., **253**(2001), 35-49.

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