

A unified treatment of the modified Newton and chord methods

I. PĂVĂLOIU

ABSTRACT.

The aim of this paper is to obtain a unified treatment of some iterative methods. We obtain some conditions for which a given equation admits a unique solution in a certain ball. The main obtained result refers to the convergence of the modified chord method.

REFERENCES

- [1] Berinde, V., *Iterative Approximation of Fixed Point*, Lecture Notes in Mathematics, Springer, 2007
- [2] Krasnoselskij, M. A., Vainikko, G. M., Zabreiko, P. P., Rutickij, Ia. B. and Oteženko, BIA, *Pribljenie resenje operatornih uravnenii*, Izdatelstva Nauka, Glavnaja Redactia Fizico-Matematicheskoj Literatury, Moskva, 1969
- [3] Păvăloiu, I., *La résolution des équations par interpolation*, Mathematica **23** (46) (1981), No. 1, 61-72
- [4] Rus, A. I., Petrușel, A. and Petrușel, Gabriela, *Fixed Point Theory*. Cluj University Press, 2008

"T. POPOVICIU" INSTITUTE OF NUMERICAL ANALYSIS
PO BOX 68-1, 400110, CLUJ-NAPOCA, ROMANIA
E-mail address: pavaloiu@ictp.acad.ro

Received: 28.04.2009; In revised form: 27.07.2009; Accepted: 27.08.2009
2000 Mathematics Subject Classification. 65J15.

Key words and phrases. *Fixed point theorem, Newton method, chord method.*