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IMPROVED RESULTS FOR CONTINUOUS MODIFIED NEWTON-TYPE METHODS

IOANNIS K. ARGYROS and HONGMIN REN

Abstract. We provide semilocal convergence results for continuous modified Newton-type methods to solve nonlinear operator equations in a real Hilbert space setting. Using a combination of Lipschitz and center Lipschitz continuous conditions, we provide a finer convergence analysis than before under weaker conditions, and the same hypotheses and computational cost [1]-[4], [11]-[15]. In this way we expand the applicability of Newton-type continuous methods under the same computational cost as before.

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Key words. Hilbert space, Banach space, Fréchet-derivative, continuous Newton-type methods.

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Cameron University
Department of Mathematics Sciences
Lawton, OK 73505, USA
E-mail: iargyros@cameron.edu

Hangzhou Radio and TV University
Department of Information and Electronics
Hangzhou 310012
Zhejiang, P.R. China
E-mail: rhm65@126.com