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A new concept of convergence for iterative methods: restricted global convergence. (English)

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Summary: We introduce a new concept of convergence for iterative methods, named restricted global convergence, that consists of locating a solution and obtaining a domain of global convergence. As a consequence, results of semilocal convergence and local convergence are obtained. For this, we use auxiliary points and obtain balls of convergence. The study is illustrated with Chebyshev’s method.

MSC:

35J60 Nonlinear elliptic equations
47H99 Nonlinear operators and their properties
65J15 Numerical solutions to equations with nonlinear operators

Keywords:
convergence for iterative methods; Chebyshev’s method

Full Text: DOI

References:


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