ON NEWTON-LIKE METHODS FOR NONLINEAR EQUATIONS.

(Abstract)

The paper investigates the iterative Newton-like methods $x_{n+1} = x_n - M_n(x) P(x_n)$, $n = 0, 1, 2, \ldots$, for the solving the equations $P(x) = 0$, where X, Y are Banach spaces, Ω is an open subset of X, $P: \Omega \to Y$ is a nonlinear operator, $M: \Omega_0 \to [Y \to X]$, Ω_0 is the closing of an open subset of Ω and $[Y \to X]$ is the set of linear bounded operators which transforms Y into X. In this paper are given similar theorems with those from [1, 2] without to suppose that exists $P''(x)$ — the second derivative of $P(x)$ in Fréchet's sense.