A class of quasi-Newton Generalized Steffensen methods on Banach spaces

We consider a class of generalized Steffensen iterations procedure for solving nonlinear equations on Banach spaces without any derivative. We establish the convergence under the Kantarovich-Ostrowski's conditions. The majorizing sequence will be a Newton's type sequence, thus the convergence can have better properties. Finally, a numerical comparation with the classical methods is presented.

Key Words. Generalized Steffensen methods, nonlinear equations, Kantarovich conditions

AMS(MOS) subject classifications. 65H10