1163-65-83   **Gus I. Argyros** (`gus.argyros@cameron.edu`), **Michael I. Argyros** (`michael.argyros@cameron.edu`), **Ioannis K. Argyros*** (`iargyros@cameron.edu`), **Samundra Regmi** (`samundra.regmi@cameron.edu`) and **Santhosh George** (`sgeorge@nitk.edu.in`). *Extended local convergence of Newton's algorithm for solving strongly regular generalized equations.*

This study presents a new one-parameter family of the well-known fixed point iteration method for solving nonlinear equations numerically. The proposed family is derived by implementing approximation through a straight line. The presence of arbitrary parameters in the proposed family improves convergence characteristic of the simple fixed-point iteration as it has a wider domain of convergence. Further, we propose many two-step predictor-corrector iterative schemes for finding fixed points which inherits the advantages of the proposed fixed-point iterative schemes. Finally, several examples are given to further illustrate their efficiency. (Received August 11, 2020)