1145-65-1885   **Samundra Regmi*** (`samundra.regmi@cameron.edu`), 2800 W Gore Blvd, Lawton, OK 73505, and **Ioannis K. Argyros**. *Majorizing Sequences for Iterative Methods with Applications.*

We present a new semi-local convergence analysis for Newton's method in order to approximate a locally unique solution of a nonlinear equation in a Banach space setting. Using tighter majorizing sequences than in earlier works, we extend the applicability of Newton's method in cases not covered before. Numerical examples show that the new results can be used to solve equations that the older results could not. (Received September 24, 2018)