1106-VL-1420   **Hamid Semiyari*** (`semiyahx@jmu.edu`), Department of Mathematics and Statistics, 305 Roop Hall, MSC 1911, James Madison University, Harrisonburg, VA 22807. *A Numerical Solution to boundary Value problems and Volterra Integrals.* Preliminary report.

G. Edgar Parker and James Sochacki, of James Madison University (JMU) developed a method based on Picard's iteration method to solve ordinary differential equations (ODEs). The method is an algorithm that generates Maclaurin series solutions to Initial Value Problems (IVPs). The method converts an IVP into a system of first order ODEs, where the right hand side is a polynomial. The advantage of this method is that the method requires only addition and multiplication which makes it a good choice for computation. We demonstrate this method for Two Point Boundary Value Problems (ODE) and Volterra Integral Equations. (Received September 12, 2014)