

28th Southeastern-Atlantic Regional Conference on Differential Equations, October 10–11,
2008, University of Arkansas at Little Rock, Little Rock Arkansas, USA

Coauthors: Clarence O. E. Burg

**APPLICATION OF RICHARDSON EXTRAPOLATION TO THE
NUMERICAL SOLUTION OF PARTIAL DIFFERENTIAL
EQUATIONS**

TAYLOR ERWIN

Richardson extrapolation is an algebraic technique for increasing the order of accuracy of numerical schemes, both the numerical formula and results generated, by uniformly refining the discretization of the equations and considering the resulting error. This method has been applied to numerical differentiation, numerical integration, and numerical solutions to ordinary differential equations. Herein, Richardson extrapolation is applied to two-dimensional numerical solvers of partial differential equations. Previous work by the author in one dimension is reviewed, and the methodology developed is extended to two dimensional finite volume solvers on unstructured triangular meshes with specific application to the shallow water equations.

UNIVERSITY OF CENTRAL ARKANSAS
E-mail address: `jte04001@uca.edu`