1046-35-126   **Ronald E. Mickens*** (`rohrs@math.gatech.edu`), Clark Atlanta University, Physics Department, Box 1744, Atlanta, GA 30314. *Traveling Wave Solutions for a Modified Fisher PDE Having Square-Root and Linear Reaction Terms.*

We investigate a modified Fisher PDE having a reaction term containing both linear and square-root expressions. Our major goal is to study the existence of traveling wave (TW) solutions and to determine their properties if they exist. The major tool for carrying out this task is the application of phase-space methods to this problem. This is possible since a reinterpretation of the second-order ODE determining the functional form of the TW solutions leads to a formulation of the TW equation as a system in particle dynamics. We examine the stability of this solution and construct a dynamical consistent nonstandard finite difference scheme that can be used to calculate numerical solutions.