

1158-65-6

Lewa' M Alzaleq* (lewa.alzaleq@wsu.edu), Department of Mathematics and Statistics,
Pullman, WA 99164, and **Manoranjan**. *Analysis of a Fish Population Model*.

Diffusion equations with nonlinear reactive terms are frequently used to describe dissipative dynamical systems in population modeling. In the talk, we will propose and study a Fish population model. A phase plane analysis of the model will be carried out. We will provide analytic solitary wave solutions when the wave speed is constant or an arbitrary function. The model will be studied using a finite difference method with exponential upwinding. The interactions of nonperiodic solitary waves will be investigated numerically. (Received October 18, 2019)