

1173-35-255

Diana Son* (dson2@vols.utk.edu). *Behavior of solitary waves to the two variants of the generalized KdV-type equation.* Preliminary report.

We study solutions to the two versions of the generalized Korteweg–De Vries equation, both with fractional powers and one of them with an absolute value incorporated into the nonlinearity, i.e., $u_t u_{xxx} u^{\alpha} u_x = 0$ vs. $u_t u_{xxx} |u|^{\alpha} u_x = 0$. We recall the well-posedness of these equations in a certain class of initial data, subset of H^1 . In this talk we analyze and compare numerical simulations of solutions to both of these equations. We look at the soliton resolution and the interactions of solitary waves, considering different types of initial data decay, including polynomial, exponential, Gaussian, and super-Gaussian-types of decay based on joint work with I. Friedman, O. Riano, S. Roudenko and K. Yang. (Received September 21, 2021)