1075-35-225 **John Albert*** (jalbert@ou.edu), 601 Elm Ave., Rm. 423, Norman, OK 73019, and **Santosh Bhattarai** (sbhattarai@math.ou.edu), 601 Elm Ave, Rm 423, Norman, OK 73019. *Stability of solitary waves for a KdV-NLS system.*

A universal model for the interaction of long nonlinear waves and packets of short waves with long linear carrier waves is given by a system in which an equation of Korteweg-de Vries type is coupled to an equation of nonlinear Schrödinger type. The system has solutions of steady form in which one component is like a solitary-wave solution of the KdV equation and the other component is like a ground-state solution of the NLS equation. The existence of such solutions can be shown by variational methods in which the constraints are positive definite; however proving the stability of the solutions is more difficult because standard techniques require analyzing a variational problem in which the constraints are not positive definite. We give a sufficient condition for certain of the steady solutions to be stable. The result is related to recent work of Angulo and of Dias, Figueira, and Oliveira. (Received August 30, 2011)