1051-35-54 **Radu C Cascaval*** (rcascava@uccs.edu) and **C. Travis Hunter**, Department of Mathematics, Colorado Springs, CO. *Numerical Studies of Interface Problems on Networks.*

Recent theoretical developments in the study of initial-boundary value problems for linear and nonlinear evolution equations have motivated further numerical studies for interface problems for PDEs posed on networks. One relevant application is modeling pressure and flow velocity waves in the vascular network. We investigate the transfer (response) functions and its nonlinear analogue for the (non)linear Schrödinger equation and the Boussinesq equation, as prototype models for bidirectional wave propagation in physical media. Two methods (finite difference and pseudo-spectral) are used for numerical computations and a comparison of the results with some analytical solutions is performed. (Received August 07, 2009)