1019-35-71   **Victor Camacho**, **Robert Guy** and **Jon Jacobsen*** (`jacobsen@math.hmc.edu`), Mathematics Department, Harvey Mudd College, 301 Platt Blvd, Claremont, CA 91711. *Traveling Waves and Shocks in a Viscoelastic Generalization of Burgers Equation.* Preliminary report.

We consider traveling wave phenomena for a viscoelastic generalization of Burgers equation. For asymptotically constant velocity profiles we find three classes of solutions corresponding to smooth wave solutions, piecewise smooth shock solutions, and piecewise constant shock solutions. Each solution type is possible for a given pair of asymptotic limits and we characterize the dynamics in terms of the relaxation time and polymer viscosity. (Received August 05, 2006)