1022-65-35   **Jorge Rebaza*** (`jrebaza@math.missouristate.edu`), Missouri State University, Department of Mathematics, 901 South National Ave, Springfield, MO 65897. *Continuation of traveling waves via an algorithm for connecting orbits.*

Several types of traveling waves (pulses, traveling fronts, wave trains) can be accurately computed by using an algorithm originally written for the systematic computation of general connecting orbits between equilibria and especially between periodic orbits. In this very important application of methods for the numerical study of dynamical systems, the discretization errors decay exponentially, and the waves are computed as solutions of well-posed problems. A smooth continuation of the traveling waves solutions is then performed that allows the computation of branches of waves and wave trains. Several examples are presented to illustrate the numerical techniques used. (Received September 04, 2006)