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Douglas E Baldwin* (douglas.baldwin@colorado.edu). *Dispersive shock wave interactions and asymptotics.*

Dispersive shock waves (DSWs) associated with the Korteweg–de Vries (KdV) equation are discussed. First, two-step data are investigated with numerical methods and with Whitham’s averaging method: when two DSWs interaction, two-phase dynamics appear at intermediate times but tend to a single-phase DSW. The long-time asymptotic solution for general, step-like data is then found. This solution is found using the inverse scattering transform (IST) and matched-asymptotic analysis. Despite multiphase dynamics at intermediate times, it’s found that interacting DSWs eventually merge to form a single-phase DSW. The boundary data determine this DSW’s form; the initial data determine its location. Initial data also determine the number and location of any solitons. (Received February 18, 2013)