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University, Morgantown, WV 26506. *L^1 Well Posedness of Euler Equations With Dynamic Phase
Boundaries.*

We discuss the well posedness of the initial value problem to Euler equations related to phase transition. The solution contains two phase boundaries moving in opposite directions. Entropy condition and kinetic relationship are used as the main admissibility criteria to select the physically relevant solution. We show the existence of the entropy solution under a suitable Finiteness Condition and a Stability Condition guarantees the stability of the problem in $L^1 \cap BV$ and the existence of a Lipschitz semigroup of solutions. We also discuss the well posedness of the problem given that the wave speeds do not differ significantly between different phases. (Received September 04, 2009)