

**Meeting:** 1002, Pittsburgh, Pennsylvania, SS 4A, Special Session on Partial Differential Equations and Applications

1002-35-188      **Robin Young\*** ([young@math.umass.edu](mailto:young@math.umass.edu)), Math and Stats Dept, U Mass, Amherst, MA 01035.

*Isentropic Gas Dynamics with Arbitrary BV Data.*

We prove global existence of solutions to the equations of isentropic gas dynamics. The pressure  $p(\rho)$  is convex and includes the important case of an ideal polytropic gas. We require the initial data to have bounded variation, but this need not be small. There are no restrictions on the supnorm of the data, and in particular, the initial data can include regions of vacuum. (Received September 14, 2004)