1048-35-68 **Kris Jenssen*** (`hkj1@psu.edu`), Dept. Math, Penn State University, University Park, State College, PA 16801, and **Irina Kogan** (`iakogan@math.ncsu.edu`), Dept. Math., North Carolina State University, Raleigh, NC 27695. *Geometry of Hyperbolic Conservation Laws.*

We consider the problem of constructing systems of hyperbolic conservation laws in one space dimension with prescribed geometry in state space: the eigenvectors of the Jacobian of the flux are given. This is formulated as a system of algebraic-differential equations which are analyzed with techniques from exterior differential systems (Cartan-Kahler theory).

It turns out that already the case with three equations is fairly complex. The role of richness (i.e. pairwise involution of the given eigenvector fields) is analyzed. As an application we characterize conservative systems with the same eigencurves as compressible gas dynamics.

This is joint work with Irina Kogan (North Carolina State University) (Received January 22, 2009)