1015-35-99   **Kris Jenssen*** (`hkj1@psu.edu`), Department of Mathematics, Penn State University, University Park, State College, PA 16802, and **Erik Endres**, Department of Mathematics, Penn State University, University Park, State College, PA 16802. *Interaction of large waves in gas dynamics.* Preliminary report.

It is known that the class of strictly hyperbolic systems of conservation laws is too large to allow a general global existence result for data with large amplitude or variation.

Restricting to systems appearing in physical models offers the hope of global existence results, even for large amplitude/variation data. One-dimensional gas-dynamics is particularly interesting in this sense.

We give an example of a solution to the Euler system which exhibits the same type of interaction pattern for which blowup has been shown in other systems. The data giving rise to these particular solutions may be arbitrarily large in BV or L^∞. By carefully estimating the interactions we show that no blowup occurs for these particular solutions. (Received January 29, 2006)