962-35-639 **Guy Bernard*** (gbernard@mail.uca.edu), Department of Mathematics, University of Central Arkansas, Conway, AR 72035. *Global Existence Theorems for the n-Dimensional Vector Burgers Equation.*

Global solutions in time to the First Boundary Value Problem for the n-dimensional vector Burgers equation are shown to exist without any conditions on the initial value other than regularity and compatibility assumptions. This result follows from the establishment of solutions which are regular up to the boundary on closed finite intervals of time which does not depend on the size of the initial value. Theses solutions are then pasted together to form the global solution. Solutions are shown to exist on each closed finite interval of time by a method combining a Monotone Iteration Method and Schauder's fixed point theorem. A regularity result on nonlinear parabolic differential equations due to H. Amann enables the implementation of Schauder's theorem without any smallness conditions on the initial value. (Received September 18, 2000)