

Meeting: 1003, Atlanta, Georgia, SS 27A, AMS-SIAM Special Session on Analysis and Applications in Nonlinear Partial Differential Equations, I

1003-35-1513 **Upali P Karunathilake*** (karunath@math.umn.edu). *Characterization of entire solutions to Burger's equation.* Preliminary report.

Burger's equation is a second order parabolic equation which is used in fluid dynamics as a simplified model for turbulence, etc. In this paper, we will try to show a 1-1 relation between entire solutions to the 1-dimensional Burger's equation and a certain type of measure on the real line. It is known that Burger's equation can be transformed into the heat equation by the Hopf-Cole transformation. We will show that positive entire solutions to the heat equation can be characterized using integral representation theorems like Krein-Milman and Choquet theory. Once this is achieved, one can get a representation of entire solutions to the original problem. (Received October 05, 2004)