

SEMINAR ON APPLIED AND NUMERICAL ANALYSIS

Date: October 18, 2019

Speaker: Cheng Yu

Title: Global solutions of the compressible Navier-Stokes equations

Abstract: In this talk, I will talk about the existence of global weak solutions for the compressible Navier-Stokes equations, in particular, the viscosity coefficients depend on the density. Our main contribution is to further develop renormalized techniques so that the Mellet-Vasseur type inequality is not necessary for the compactness. This provides existence of global solutions in time, for the barotropic compressible Navier-Stokes equations, for any $\gamma > 1$, in three dimensional space, with large initial data, possibly vanishing on the vacuum. This is a joint work with D. Bresch and A. Vasseur.