1038-35-96   **Donatella Donatelli** and **Konstantina Trivisa*** (`trivisa@math.umd.edu`), Department of Mathematics, University of Maryland, College Park, MD 20742. *From the dynamics of gaseous stars to the incompressible Euler equations.*

A model for the dynamics of gaseous stars is introduced formulated by the Navier-Stokes-Poisson system for compressible, reacting gases. The combined quasineutral and inviscid limit of the Navier-Stokes-Poisson system in the torus is investigated. The convergence of the Navier-Stokes-Poisson system to the incompressible Euler equations is proven for the global weak solution and for the case of general initial data. (Received January 31, 2008)