

This thesis contains a set of articles concerned with flow of a viscous, compressible and heat conducting fluid in large domains. In the first part of the thesis, the existence of the weak solutions in unbounded domains is studied. The results follow each other in the way they were obtained through the time, and range from a simple extension to bounded domains with Lipschitz boundary up to the most general existence theorem for fluid flow in general open sets. The existence results are supplemented with the study of existence of weak solutions in the unbounded domain case with prescribed nonvanishing boundary conditions for density and temperature at infinity. The last contribution then concerns with the low Mach number limit in the compressible fluid flow.