Mathematical models of viscous, heat conducting fluids

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Abstract

We discuss several results concerning well-posedness as well as the possibility of numerical approximation of the complete Navier-Stokes-Fourier system describing the time evolution of a compressible viscous and/or heat conducting fluid. Several concepts of weak solutions are introduced along with the relevant existence theory based on proving convergence of an appropriate numerical scheme. Some counter examples to well-posedness, mostly in the context of invisicd fluids, are also discussed.

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