

Existence of strong solutions to a class of compressible non-Newtonian Navier-Stokes equations

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Abstract

We discuss a local-in-time existence of a strong solution to the generalized compressible Navier-Stokes equation for arbitrarily large initial data. The existence of the solution is obtained by the maximal $L^p - L^q$ -regularity theorem for linearized equations which is proven with help of the Weis multiplier theorem. The result can be seen as generalization of the work of Shibata and Enomoto (devoted to compressible fluids) to compressible non-Newtonian fluids.