Long-time behavior of global weak solutions for a Beris-Edwards type model of nematic liquid crystals

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November 16, 2020

Abstract

We consider a generalization of the standard Beris-Edwards system modeling incompressible liquid crystal flows of nematic type. This couples a Navier-Stokes system for the fluid velocity with an evolution equation for the Q-tensors variable describing the direction of liquid crystal molecules. The convergence at infinite time for global solutions is studied and we prove that whole trajectory goes to a single equilibrium by using a Lojasiewicz-Simon's result.

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