

On well-posedness of a magnetization-variables model for Navier-Stokes equations with damping

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Abstract

This paper aims to establish existence and uniqueness results of weak and strong solution to the three-dimensional periodic magnetization-variables formulation to Navier-Stokes equations with damping term. Authors in precedent works addressed the question as to whether this model and similar ones without damping term possess a weak solution. In this vein, considering a damping term in the magnetization-variable formulation turned to be consequential as it enforces existence and uniqueness results. Energy methods, compactness methods are the main tools.

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