

Some Liouville-type theorems for the stationary 3D magneto-micropolar fluids

Jae-Myoung Kim¹ and Seungchan Ko²

¹Andong National University

²The University of Hong Kong

April 21, 2022

Abstract

In this paper we prove some Liouville-type theorems for the stationary magneto-micropolar fluids under suitable conditions in three space dimensions. We first prove that the solutions are trivial under the assumption of certain growth conditions for the mean oscillations of the potentials. And then we show similar results assuming that the the solutions are contained in $L^p(\mathbb{R}^3)$ with $p \in [2, 9/2)$. Finally we show the same result for lower values of $p \in [1, 9/4)$ with the further assumption that the solutions vanish at infinity.

Hosted file

Liouville_MMP.pdf available at <https://authorea.com/users/302434/articles/566243-some-liouville-type-theorems-for-the-stationary-3d-magneto-micropolar-fluids>

Hosted file

Liouville_MMP.tex available at <https://authorea.com/users/302434/articles/566243-some-liouville-type-theorems-for-the-stationary-3d-magneto-micropolar-fluids>

Hosted file

references.bib available at <https://authorea.com/users/302434/articles/566243-some-liouville-type-theorems-for-the-stationary-3d-magneto-micropolar-fluids>

Hosted file

WileyNJD-v2.cls available at <https://authorea.com/users/302434/articles/566243-some-liouville-type-theorems-for-the-stationary-3d-magneto-micropolar-fluids>