

Optimal time decay rates of solutions for the 2D generalized magneto-micropolar equations

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Abstract

This study is concerned with the optimal time rates of weak solutions for the 2D magneto-micropolar equations with only micro-rotational dissipation and magnetic diffusion. Due to some new observations, we obtain the optimal time decay rates of weak solutions $\|\nabla u(t)\|_{L^2} + \|\nabla w(t)\|_{L^2} \leq C(1+t)^{-2}$ and $\|\nabla b(t)\|_{L^p} \leq C(1+t)^{-\frac{2}{2-(\frac{1}{2}-\frac{1}{p})}}$ with $p \in [2, \infty)$.

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