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Title: A weak-L^p Prodi-Serrin type regularity criterion for the micropolar fluid equations

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Abstract: We investigate the regularity criteria for weak solutions to the micropolar fluid equation in a bounded domain of $\mathbb{R}^3$. We show that the solution $(\boldsymbol{u}, \boldsymbol{w})$ is strong on $[0,T]$ if $\boldsymbol{u} \in L^s((0,T), L^{r,\infty}(\Omega))$ or $\boldsymbol{u} \in L^{s,\infty}((0,T), L^{r,\infty}(\Omega))$ with norm bounded by a constant, where $(3/r) + (2/s) = 1$ and $r > 3$.

Acknowledgements

References

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[2] Lukaszewicz, G., Micropolar fluids, theory and applications. Birkhauser, Boston, 1999.