cases	doc_1		doc_2		decision	id
	authors	• Xin Zhong	**authors**	• Xin Zhong	NOT DUPLICATES	1220
	title	Global well-posedness and exponential decay of 2D nonhomogeneous Navier-Stokes and magnetohydrodynamic equations with density-dependent viscosity and vacuum	**title**	Global well-posedness to the 2D Cauchy problem of nonhomogeneous heat conducting Navier-Stokes and magnetohydrodynamic equations with vacuum at infinity		
	publication_date	2021-02-24 13:53:58+00:00	**publication_date**	2021-09-04 03:15:34+00:00		
	source	SupportedSources.ARXIV	**source**	SupportedSources.ARXIV		
	journal	J. Geom. Anal. 32 (2022), no. 1, Paper No. 19	**journal**	None		
	volume		**volume**			
	doi		**doi**	10.1007/s00021-021-00649-0		
	urls	• http://arxiv.org/pdf/2102.12288v2 • http://arxiv.org/abs/2102.12288v2 • http://arxiv.org/pdf/2102.12288v2	**urls**	• http://arxiv.org/pdf/2109.01775v2 • http://dx.doi.org/10.1007/s00021-021-00649-0 • http://arxiv.org/abs/2109.01775v2 • http://arxiv.org/pdf/2109.01775v2		
	id	id7505038898711246276	**id**	id35793710653135021 00		
	abstract	We establish global well-posedness of strong solutions for the nonhomogeneous magnetohydrodynamic equations with density-dependent viscosity and initial density allowing vanish in two-dimensional (2D) bounded domains. Applying delicate energy estimates and Desjardins' interpolation inequality, we derive the global existence of a unique strong solution provided that $\|\nabla\mu(\rho_0)\|_{L^q}$ is suitably small. Moreover, we also obtain exponential decay rates of the solution. In particular, there is no need to impose some compatibility condition on the initial data despite the presence of vacuum. As a direct application, it is shown that the similar result also holds for the nonhomogeneous Navier-Stokes equations with density-dependent viscosity.	**abstract**	We revisit the 2D Cauchy problem of nonhomogeneous heat conducting magnetohydrodynamic (MHD) equations in $\mathbb{R}^2$. For the initial density allowing vacuum at infinity, we derive the global existence and uniqueness of strong solutions provided that the initial density and the initial magnetic decay not too slowly at infinity. In particular, the initial data can be arbitrarily large. This improves our previous work where the initial density has non-vacuum states at infinity. The result could also be viewed as an extension of the study in L{\"u}-Xu-Zhong for the inhomogeneous case to the full inhomogeneous situation. The method is based on delicate spatial weighted estimates and the structural characteristic of the system under consideration. As a byproduct, we get the global existence of strong solutions to the 2D Cauchy problem for nonhomogeneous heat conducting Navier-Stokes equations with vacuum at infinity.		
	versions		**versions**			