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	authors	<ul style="list-style-type: none">Hmidi, T.			DUPLICATES	1069
	title	On the Yudovich solutions for the ideal MHD equations	authors	<ul style="list-style-type: none">Taoufik, Hmidi		
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	id	id-3329758964244757054	urls	<ul style="list-style-type: none">http://arxiv.org/abs/1401.6326		
	abstract		id	id-6021242166714259555		
	versions		abstract	In this paper, we address the problem of weak solutions of Yudovich type for the inviscid MHD equations in two dimensions. The local-in-time existence and uniqueness of these solutions sound to be hard to achieve due to some terms involving Riesz transforms in the vorticity-current formulation. We shall prove that the vortex patches with smooth boundary offer a suitable class of initial data for which the problem can be solved. However this is only done under a geometric constraint by assuming the boundary of the initial vorticity to be frozen in a magnetic field line. We shall also discuss the stationary patches for the incompressible Euler system (E) and the MHD system. For example, we prove that a stationary simply connected patch with rectifiable boundary for the system (E) is necessarily the characteristic function of a disc.Comment: 40 page		
			versions			