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	abstract	For the free boundary problem of the plasma-vacuum interface to ideal incompressible magnetohydrodynamics (MHD) in two-dimensional space, the a priori estimates of solutions are proved in Sobolev norms by adopting a geometrical point of view. In the vacuum region, the magnetic field is described by the div-curl system of pre-Maxwell dynamics, while at the interface the total pressure is continuous and the magnetic field is tangent to the boundary. We prove that the L^2 norms of any order covariant derivatives of the magnetic field in vacuum and on the boundaries are bounded in terms of initial data and the second fundamental forms of the free interface and the rigid wall.	**abstract**	For the free boundary problem of the plasma-vacuum interface to three-dimensional ideal incompressible magnetohydrodynamics (MHD), the a priori estimates of smooth solutions are proved in Sobolev norms by adopting a geometrical point of view and some quantities such as the second fundamental form and the velocity of the free interface are estimated. In the vacuum region, the magnetic fields are described by the div-curl system of pre-Maxwell dynamics, while at the interface the total pressure is continuous and the magnetic fields are tangent to the interface, but we do not need any restrictions on the size of the magnetic fields on the free interface. We introduce the "virtual particle" endowed with a virtual velocity field in vacuum to reformulate the problem to a fixed boundary problem under the Lagrangian coordinates. The L^2-norms of any order covariant derivatives of the magnetic fields both in vacuum and on the boundaries are bounded in terms of initial data and the second fundamental forms of the free interface and the rigid wall. The estimates of the curl of the electric fields in vacuum are also obtained, which are also indispensable in elliptic estimates.		
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