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	authors	• Kun • Xu	**authors**	• Kun • Xu	DUPLICATES	959
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	abstract	A gas-kinetic solver is developed for the ideal magnetohydrodynamics (MHD) equations. The new scheme is based on the direct splitting of the flux function of the MHD equations with the inclusion of "particle" collisions in the transport process. Consequently, the artificial dissipation in the new scheme is much reduced in comparison with the MHD Flux Vector Splitting Scheme. At the same time, the new scheme is compared with the well-developed Roe-type MHD solver. It is concluded that the kinetic MHD scheme is more robust and efficient than the Roe-type method, and the accuracy is competitive. In this paper the general principle of splitting the macroscopic flux hmction based on the gas-kinetic theory is presented. The flux construction strategy may shed some light on the possible modification of AUSMand CUSPtype schemes for the compressible Euler equations, as well as to the development of new schemes for a non-strictly hyperbolic system. Key words, magnetohydrodynamics, flux splitting, gas-kinetic scheme Subject classification. Applied Numerical Mathematics	**abstract**	A gas-kinetic solver is developed for the ideal magnetohydrodynamics (MHD) equations. The new scheme is based on the direct splitting of the flux function of the MHD equations with the inclusion of "particle" collisions in the transport process. Consequently, the artificial dissipation in the new scheme is much reduced in comparison with the MHD Flux Vector Splitting Scheme. At the same time, the new scheme is compared with the well-developed Roe-type MHD solver. It is concluded that the kinetic MHD scheme is more robust and efficient than the Roe-type method, and the accuracy is competitive. In this paper the general principle of splitting the macroscopic flux hmction based on the gas-kinetic theory is presented. The flux construction strategy may shed some light on the possible modification of AUSMand CUSPtype schemes for the compressible Euler equations, as well as to the development of new schemes for a non-strictly hyperbolic system. Key words, magnetohydrodynamics, flux splitting, gas-kinetic scheme Subject classification. Applied Numerical Mathematics		
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