Formation of Singularities in One-Dimensional Hydromagnetic Flow

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Abstract: Two results on the formation of singularities in solutions to the system of one-dimensional hydromagnetic dynamics are presented. In particular, it is shown that shocks form from a smooth spatial periodic flow in a finite time if the initial amounts of entropy and the ``magnetic field'' in each period are smaller than those of sound waves. A quantitative estimate of blow-up time is also given.

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