

Original Articles

Entropy Production and Admissibility of Shocks

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摘要 In shock wave theory there are two considerations in selecting the physically relevant shock waves. There is the admissibility criterion for the well-posedness of hyperbolic conservation laws. Another consideration concerns the entropy production across the shocks. The latter is natural from the physical point of view, but is not sufficient in its straightforward formulation, if the system is not genuinely nonlinear. In this paper we propose the principles of increasing entropy production and that of the superposition of shocks. These principles are shown to be equivalent to the admissibility criterion.

关键词 [entropy production](#) [admissibility condition](#)

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Abstract In shock wave theory there are two considerations in selecting the physically relevant shock waves. There is the admissibility criterion for the well-posedness of hyperbolic conservation laws. Another consideration concerns the entropy production across the shocks. The latter is natural from the physical point of view, but is not sufficient in its straightforward formulation, if the system is not genuinely nonlinear. In this paper we propose the principles of increasing entropy production and that of the superposition of shocks. These principles are shown to be equivalent to the admissibility criterion.

Key words [entropy production](#) [admissibility condition](#)

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