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Uniqueness of entropy solutions for nonlinear degenerate parabolic problems. (English)

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Summary: We consider the general degenerate parabolic equation:

$$u_t - \Delta b(u) + \operatorname{div} F(u) = f \quad \text{in } Q \in]0, t[\times \mathbb{R}^N, \quad t > 0.$$

We prove existence of Kruzhkov entropy solutions of the associated Cauchy problem for bounded data where the flux function F is supposed to be continuous. Uniqueness is established under some additional assumptions on the modulus of continuity of F and b .

MSC:

35K65 Degenerate parabolic equations

35L65 Hyperbolic conservation laws

35K15 Initial value problems for second-order parabolic equations

Cited in **20** Documents

Keywords:

Kruzhkov entropy solutions; bounded data

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