
Removable Singularities and Quasilinear Parabolic Equations with an Exponential Term

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Saraiva (1985) studied the characterization of sets of weighted capacity zero, and used it for obtaining removable singularities results for weak solutions of degenerate quasilinear parabolic equations. In this paper we aim at obtaining a removable singularities result quasilinear parabolic equations with an exponential term, using the above mentioned characterization, for a particular case where an embedding into an Orlicz space holds. We will study the equation

$$u_t = \operatorname{div} A(x, t, u, u_x) + B(x, t, u, u_x) + e^{bu},$$

where A and B are respectively vector and scalar valued measurable functions defined on $\Omega \times \mathbb{R} \times \mathbb{R}^N$, Ω an open set in \mathbb{R}^{N+1} , and satisfying certain structure inequalities. We will adapt the technique used by Saraiva (1985) to this particular case and use the embedding into an Orlicz space to compensate the existence of the exponential term.

References

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