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ERRATUM TO "THE BEHAVIOR OF THE SUPPORT OF SOLUTIONS OF THE EQUATION OF NONLINEAR HEAT CONDUCTION WITH ABSORPTION IN ONE DIMENSION"

BY

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The proofs of Lemma 3.1 and Theorem 3.6 must be modified if the function ψ in (1.1) is not Lipschitz; but both results remain valid in any case, and the proofs are unchanged when ψ is Lipschitz. All other proofs are correct as they stand.

The problem is that Lemma 3.1 and Theorem 3.6 are based on the approximating sequence $\{w_n\}$ (introduced in **[8]** of the original paper) which solves

$$(w_n)_{xx} - \Phi'(w_n)(w_n)_t - \psi(\Phi(w_n)) = 0. \tag{2.23}$$

However, due to an oversight in **[8]**, classical solutions may not exist if ψ is not Lipschitz. This is because it is not possible to establish *positive a priori* lower bounds for the functions w_n, and thus (2.23) is degenerate.

I have communicated this technical problem to Robert Kershner, and, in his paper *Degenerate parabolic equations with general nonlinearities* (to appear) he has succeeded in proving Lemma 3.1 and Theorem 3.6 when ψ is not Lipschitz. Roughly speaking, Kershner adds a term $\psi(c_n)$ to the left side of (2.23) (where $0 < c_n \downarrow 0$) and then establishes *a priori positive* lower bounds for the new w_n, so that the modified (2.23) is now nondegenerate.

The proof of Theorem 5.1 needs no correction since, even if ψ were not Lipschitz, (5.11) still follows (because $\psi(c_n) > 0$).

References

Barry F. Knerr, *The behavior of the support of solutions of the equation of nonlinear heat conduction with absorption in one dimension*, Trans. Amer. Math. Soc. **249** (1979), 409–424.

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