



Errata to “Asymptotic Behaviour of Solutions to Phase Field Models with Constraints” in Volumno 39

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In condition (q2) of Section 3 we have to assume further that

(1) $q''(u^\infty; \cdot)$ is not identically zero in any neighbourhood of ζ_0 .

In fact, if $q'' \equiv 0$ on an interval $[\zeta_0 - \delta, \zeta_0 + \delta], \delta > 0$, then

$$(2) \quad I(b) = \frac{2^{1/2}\pi}{|q'(u^\infty; \zeta_0)|^{1/2}} =: I_0 \text{ for all } b \in [b_1, 0],$$

where $[b_1, 0]$ is the largest interval on which $I = I_0$; note that $b_*(u^\infty) \leq b_1 < 0$. In this case, the set $S(b_1) := \{cW_0 + \zeta_0; c \in [\eta_-(b_1) - \zeta_0, \eta_+(b_1) - \zeta_0]\}$, with

$$W_0(x) := \cos \frac{|q'(u^\infty; \zeta_0)|^{1/2}(x + L)}{\kappa^{1/2}},$$

is a subset of S^* , if $2LI_0^{-1}(\kappa/2)^{-1/2} =: k_0$ is positive integer. Moreover, S_0 is no longer finite and can be decomposed as $S_0 = S_0^{(1)} + S_0^{(2)}$, where $S_0^{(1)}$ is a (finite) set included in $\tilde{S}_0$ and

$$S_0^{(2)} = S(b_1) - \{cW_0 + \zeta_0; c = 0, \eta_-(b_*(u^\infty)) - \zeta_0, \eta_+(b_*(u^\infty)) - \zeta_0\}.$$

Consequently we observe:

(a) Under a further assumption (1), $S_0^{(2)} = \emptyset$ and hence all the statements and results mentioned in the paper hold true without any change.

(b) In the case when (1) is not satisfied, we have (2) and if k_0 is positive integer, then the set $S(b_1)$ possibly forms one ω -limit set of the order parameter ω . If k_0 is not a positive integer, then $S(b_1)$ contains no stationary solutions of $P(\sigma_*, \sigma^*; u^\infty)$; namely $S_0^{(2)} = \emptyset$.

For a class of parabolic equations with obstacle (of the Allen-Cahn type), the stability of stationary problems was investigated in detail by X. Chen and C. M. Elliott (Proc. Roy. Soc. London Ser. A, 444 (1994), 429–445), when $q(u^\infty; v) = -v$ (hence (1) does not hold); in this case, any non-constant stationary solution belongs to similar classes to $S_0^{(2)}$ or S_1 . But, so far as the stability is concerned, our case is quite different from theirs, since the model is a couple of

two parabolic equations (see a forthcoming paper of the authors, Tech. Reports Math. Sci., Chiba Univ., 1997).

nuna adreso:

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