

Correction to Lemma 3.5 in the paper [P. Poláčik, Estimates of solutions and asymptotic symmetry for parabolic equations on bounded domains, Arch. Rational Mech. Anal. 183 (2007), 59-91].

1) The last sentence in Lemma 3.5 should be modified as follows:

If v is a solution of (3.23), then the conclusion holds with $p = \infty$ and with κ, κ_1 independent of ε , if one replaces g^- in (3.23) with g .

2) The following text should be added at the end of the proof of Lemma 3.5.

To prove the statement regarding a solution v of (3.22), the above proof can be adapted as follows. First assume the extra regularity assumptions on U and a_{ij} , as above. With v_1, v_2, v_3 defined as before, also write $v_1 = v_{11} + v_{12}$, where v_{11} solves the homogeneous equation (3.9) and is equal to v_1 on $\partial_P(U \times (\tau, \tau_4))$, and v_{12} solves the nonhomogeneous equation

$$v_t = a_{ij}(x, t)v_{x_i x_j} + b_i(x, t)v_{x_i} + c(x, t)v + g^+(x, t), \quad (x, t) \in U \times (\tau, \tau_4),$$

and is equal to 0 on $\partial_P(U \times (\tau, \tau_4))$. Then both v_{11} and v_{12} are nonnegative by the maximum principle. In the estimate below, we apply the Krylov-Safonov Harnack inequality (with $p = \infty$) to v_{11} , and to v_{12} we shall apply the Alexandrov-Krylov estimate:

$$\sup_{U \times (\tau, \tau_4)} |v_{12}| \leq \kappa_2 \|g^+\|_{L^{N+1}(U \times (\tau, \tau_4))}.$$

The final estimate on v now goes as follows

$$\begin{aligned} v(x, t) &= v_{11}(x, t) + v_{12}(x, t) + v_2(x, t) + v_3(x, t) \\ &\geq v_{11}(x, t) + v_2(x, t) + v_3(x, t) \\ &\geq \kappa \sup_{D \times (\tau_1, \tau_2)} v_{11} - e^{m(\tau_4 - \tau)} \sigma - \kappa_1 \|g^-\|_{L^{N+1}(U \times (\tau, \tau_4))} \\ &= \kappa \sup_{D \times (\tau_1, \tau_2)} (v_1 - v_{12}) - e^{m(\tau_4 - \tau)} \sigma - \kappa_1 \|g^-\|_{L^{N+1}(U \times (\tau, \tau_4))} \\ &\geq \kappa \sup_{D \times (\tau_1, \tau_2)} v_1 - \sup_{D \times (\tau_1, \tau_2)} v_{12} - e^{m(\tau_4 - \tau)} \sigma - \kappa_1 \|g^-\|_{L^{N+1}(U \times (\tau, \tau_4))} \\ &\geq \kappa \sup_{D \times (\tau_1, \tau_2)} v^+ - \kappa_2 \|g^+\|_{L^{N+1}(U \times (\tau, \tau_4))} - e^{m(\tau_4 - \tau)} \sigma - \kappa_1 \|g^-\|_{L^{N+1}(U \times (\tau, \tau_4))} \\ &\geq \sup_{D \times (\tau_1, \tau_2)} v^+ - (\kappa_1 + \kappa_2) \|g\|_{L^{N+1}(U \times (\tau, \tau_4))} - e^{m(\tau_4 - \tau)} \sigma. \end{aligned}$$

Now one can remove the restrictions on U and a_{ij} as above.