

**Regularity of a weak solution to the first initial boundary value problem for a nonlinear degenerate parabolic equation, *Ukr. Math. Bulletin*, 3 № 1 (2006), 1-30. (N.V. Krasnoschek).**

Abstract

We prove that a homogeneous Dirichlet problem for the quasilinear degenerate parabolic equation  $v_t = v^{1+s} v_{xx}$ ,  $0 < s < 1$ , has a classical solution in weight Hölder classes. The proof is based on obtaining coercive estimates for the homogeneous Dirichlet problem for the model equation  $u_t = x^{1+s} u_{xx} + f$  on the half-line  $x > 0$  by using methods of the potential theory.