

# LONG TIME ASYMPTOTIC BEHAVIOR OF SOLUTION OF DIFFERENCE SCHEME FOR A SEMILINEAR PARABOLIC EQUATION

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摘要

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# LONG TIME ASYMPTOTIC BEHAVIOR OF SOLUTION OF DIFFERENCE SCHEME FOR A SEMILINEAR PARABOLIC EQUATION

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**Abstract** In this paper we prove that the solution of implicit difference scheme for a semilinear parabolic equation converges to the solution of difference scheme for the corresponding nonlinear stationary problem as  $t \rightarrow \infty$ . For the discrete solution of nonlinear parabolic problem, we get its long time asymptotic behavior which is similar to that of the continuous solution. For simplicity, we consider one-dimensional problem.

**Key words** [Asymptotic behavior](#) [implicit difference scheme](#) [semilinear parabolic equation.](#)

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