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On blow-up and asymptotic behavior of solutions to a nonlinear parabolic equation of second order with nonlinear boundary conditions

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Abstract: We obtain some sufficient conditions under which solutions to a nonlinear parabolic equation of second order with nonlinear boundary conditions tend to zero or blow up in a finite time. We also give the asymptotic behavior of solutions which tend to zero as $t \rightarrow \infty$. Finally, we obtain the asymptotic behavior near the blow-up time of certain blow-up solutions and describe their blow-up set.

Keywords: blow-up, global existence, asymptotic behavior, maximum principle

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