

# On the Finite Difference Approximation for Parabolic Blow-up Problems

**Cho Chien-Hong**

D2, KYOTO UNIVERSITY, JAPAN

cho1003jp@yahoo.co.jp

We consider  $u_t = u_{xx} + f(u)$  ( $0 < x < 1$ ,  $t > 0$ ) and its finite difference analogue, whose solutions blow up in finite time. We report our recent results on the convergence and asymptotic behaviour of the finite difference solutions. Our recent results on numerical blow-up of the nonlinear wave equation  $u_{tt} = u_{xx} + u^2$  ( $0 < x < 1$ ,  $t > 0$ ) will also be reported.