

DISCRETE MAXIMUM PRINCIPLES FOR THE FEM SOLUTION OF SOME NONLINEAR PARABOLIC PROBLEMS*

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Dedicated to Richard S. Varga on the occasion of his 80th birthday

Abstract. Discrete maximum principles are established for finite element approximations of nonlinear parabolic problems. The conditions on the space and time discretizations are similar to the usual conditions for linear problems.

Key words. nonlinear parabolic problems, discrete maximum principle, finite element method

AMS subject classifications. 65M60, 65M50, 35B50

*Received March 16, 2009. Accepted for publication December 9, 2009. Published online on March 25, 2010. Recommended by J. Li. This work was supported by the Hungarian Research Grant OTKA no. K 67819, by HAS under the Bolyai János Scholarship, by the Academy Research Fellowship no. 208628 and project no. 124619 from the Academy of Finland.

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