

PARABOLIC QUASI-VARIATIONAL
INEQUALITIES (II)
– REMARKS ON CONTINUITY OF SOLUTIONS –

MARIA GOKIELI

Faculty of Mathematics and Natural Sciences, School of Exact Sciences,
Cardinal Stefan Wyszyński University, Warsaw, Poland
(E-mail: maria.gokieli@gmail.com)

NOBUYUKI KENMOCHI

Faculty of Education, Chiba University, Chiba, Japan
(E-mail: nobuyuki.kenmochi@gmail.com)

and

MAREK NIEZGÓDKA

CNT Center, Cardinal Stefan Wyszyński University, Warsaw, Poland
(E-mail: marekn1506@gmail.com)

Abstract. This paper is concerned with a parabolic variational obstacle problem (VI) for a semimonotone operator coupled with a semi-linear heat equation (H) . Denoting the solutions of (VI) and (H) by u and θ , respectively, we suppose that the heat source term of (H) depends on u and an interior obstacle of the form

$$|u| \leq \gamma(\theta)$$

is imposed. In case the obstacle function $\gamma(\theta)$ is continuous, but degenerate, namely $\gamma(\theta) = 0$ may happen somewhere, the continuity of u in time has not proved yet for a general class of quasi-variational inequalities, such as $\{(VI), (H)\}$. In this paper we shall discuss it in a typical case of $\{(VI), (H)\}$.

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