



REMARKS ON EXTENSION OF CONVEX FUNCTIONS
AND APPLICATION TO EVOLUTION INCLUSIONS
GENERATED BY $-\Delta\beta$

NOBUYUKI KENMOCHI

Department of Mathematics, Faculty of Education, Chiba University
1-33 Yayoi-chō, Inage-ku, Chiba, 263-8522, Japan
(E-mail: nobuyuki.kenmochi@gmail.com)

Abstract. This paper is concerned with a generalization of the extension result of proper lower semicontinuous convex functions on reflexive Banach spaces onto their dual spaces obtained in [6]. In the analysis of variational inequalities it is often necessary to extend convex functions onto a larger space than the original one in connection with the weak variational formulation.

In this paper, letting φ be a proper, lower semicontinuous convex function on a Hilbert space H and X be a Banach space which dense and continuously embedded in H , we show that φ can be extended onto the dual space X^* of X as a proper, lower semicontinuous and convex function, and discuss the solvability of an evolution inclusion generated by $-\Delta\beta$ as an application.

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