

APPROXIMATE METHODS FOR SINGULAR OPTIMAL CONTROL PROBLEMS OF NONLINEAR EVOLUTION INCLUSIONS WITH QUASI-VARIATIONAL STRUCTURE

Dedicated to Professor Mitsuharu Ôtani on the Occasion of his 70th Birthday

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)

KEN SHIRAKAWA

Department of Mathematics, Faculty of Education, Chiba University
1-33 Yayoi-chō, Inage-ku, Chiba, 263-8522, Japan
(E-mail: sirakawa@faculty.chiba-u.jp)

and

NORIAKI YAMAZAKI

Department of Mathematics, Faculty of Engineering, Kanagawa University
3-27-1 Rokkakubashi, Kanagawa-ku, Yokohama, 221-8686, Japan
(E-mail: noriaki@kanagawa-u.ac.jp)

Abstract. In this paper, we consider abstract doubly quasi-variational evolution inclusions governed by time-dependent subdifferentials, and we are interested in a general class of singular optimal control problems that are set up for non-well-posed state systems. Our main objective of this paper is to establish an approximate procedure for such singular optimal control problems by considering parameter-dependent evolution inclusions. Also, we apply our abstract results to quasi-variational inequalities with time-dependent gradient constraints: interior obstacle problems and Navier-Stokes type problem.

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