



**OPTIMAL CONTROL OF PARABOLIC HEMIVARIATIONAL
INEQUALITIES OF INFINITE ORDER**

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Abstract

In this paper, we study the optimal control of systems described by parabolic hemivariational inequalities of infinite order. In the first part, we find the existence of a solution to a parabolic hemivariational inequality where the operator A is an infinite order differential operator on Sobolev spaces of infinite order for Dubinskii by using the regularization technique and Galerkin method. In the second, we formulate the corresponding control problem and then we establish the existence of optimal control pairs.

Keywords and phrases: optimal control, parabolic hemivariational inequality, infinite order.

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