



PERIODIC SOLUTIONS TO A CLASS OF ELLIPTIC-PARABOLIC QUASI-VARIATIONAL EVOLUTION EQUATIONS

Dedicated to Professor Naoki Sato on the Occasion of His 60th Birthday

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Abstract. Recently, we established the solvability theory for a class of abstract elliptic-parabolic quasi-variational evolution equations associated with subdifferential operators depending on both time and the unknown. In this paper a time-periodicity problem is considered. More precisely, assuming time-periodicity for the subdifferential operator, we prove the existence of time-periodic solutions to abstract elliptic-parabolic quasi-variational evolution equations by using the auxiliary approximate problems and the fixed-point argument. In addition, we give some applications, for example, quasi-linear elliptic-parabolic quasi-variational inequalities with time-periodic constraints, of non-local time-delay or memory type, depending on the unknown.

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