

A SPECIAL HEMIVARIATIONAL INEQUALITY

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Abstract. Let X be a Banach space, X^* its dual and let $T : X \rightarrow L^p(\Omega, \mathbb{R}^k)$ be a linear, continuous operator, where $p, k \geq 1$, Ω being a bounded open set in \mathbb{R}^N . Let K be a subset of X , $\mathcal{A} : K \rightsquigarrow X^*$, $F : K \rightsquigarrow K$ be set-valued mappings with nonempty values and $j : \Omega \times \mathbb{R}^k \rightarrow \mathbb{R}$ a Carathéodory function, which is locally Lipschitz in the second argument. Under some condition we guarantee solution for the following problem: find $u \in F(u)$ such that, for every $v \in F(u)$,

$$\sigma(\mathcal{A}(u), v - u) + \int_{\Omega} j_y^0(x, Tu(x), Tv(x) - Tu(x)) dx \geq 0.$$

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Received May 20, 2002

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