TOWARD THE L^1-THEORY OF DEGENERATE ANISOTROPIC ELLIPTIC VARIATIONAL INEQUALITIES

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We consider nonlinear elliptic second-order variational inequalities with degenerate (with respect to the spatial variable) and anisotropic coefficients and L^1-data. We study the cases where the set of constraints belongs to a certain anisotropic weighted Sobolev space and a larger function class. In the first case, some new properties of T-solutions and shift T-solutions of the investigated variational inequalities are established. Moreover, the notion of $W^{1,1}$-regular T-solution is introduced, and a theorem of existence and uniqueness of such a solution is proved. In the second case, we introduce the notion of $\mathcal{T}$-solution of the variational inequalities under consideration and establish conditions of existence and uniqueness of such a solution.

Keywords: nonlinear elliptic variational inequalities, anisotropy, degeneration, L^1-data, T-solution, $\mathcal{T}$-solution.

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